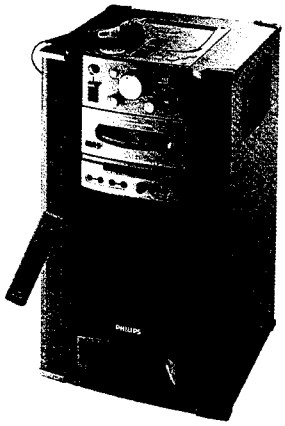
Karaoke Box

CD6660/00/01/17

Service
Service
Service



Service Manual

COMPACT disc DIGITAL AUDIO

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Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

CLASS 1
LASER PRODUCT

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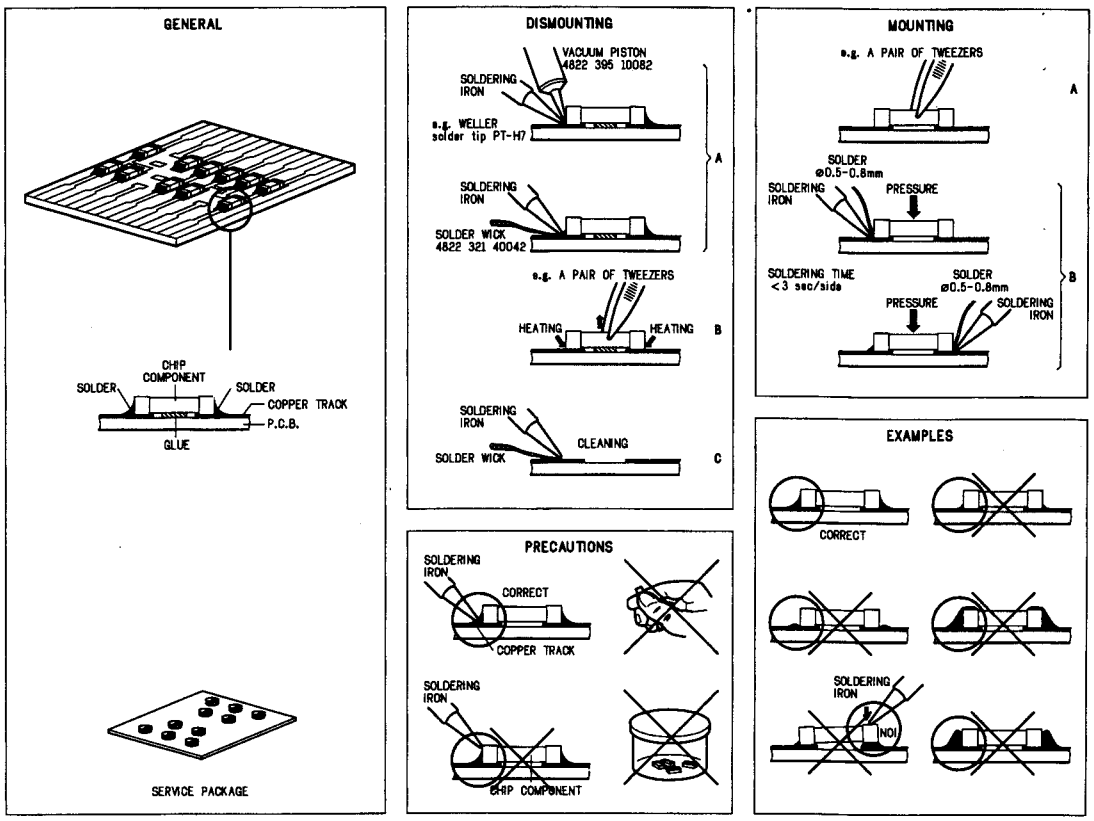
PCS 97 590

PHILIPS

HANDLING CHIP COMPONENTS



(GB) WARNING

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools at this potential.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévite pourrait être considérablement écourtée par le fait qu'aucune précaution nést prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfileer le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

ESD

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.
Sorgen Sie dafür, dab sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen vermindern. Zorg ervoor dat u tijdens reparatie via een polsband met wererstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statische (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparationi occorre quindi essere collegato allo stesso potenziale che quello della massa delápparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

Anti-static table matlarge1200x650x1.25mm	4822 466 10953
small 600x650x1.25mm	4822 466 10958
Anti-static wrist band	4822 395 10223
Connection box (1MOhm)	4822 320 11307
Extendible cable (to connect wrist band to conn. box)	4822 320 11305
Connecting cable (to connect table mat to conn. box)	4822 320 11306
Earth cable (to connect any product to mat or box)	4822 320 11308
Complete kit ESD3 (combining all above products)	4822 310 10671
Wristband tester	4822 344 13999

(GB)
Safety regulations require that the set be restored to its originial condition and that parts which are identical with those specified be used.
Safety components are marked by those symbol. ⚠

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(DK) Advarsel !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

(SF) Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(GB) WARNING

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(F) ATTENTION

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

(D) WARNUNG

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originaizustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Original-ersatzteile zu verwenden.

(NL) WAARSCHUWING

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkeliijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

(I) AVVERTIMENTO

Le norme di sicurezza estigono che l'apparecchio venga rimesso nelle condizioni orginali e che siano utilizzati i pezzi di ricambiago identici a quelli specificati.

(GB)
After servicing and before returning the set to customer perform a leakage current measurement test from all exposed metal parts to earth ground, to assure no shock hazard exists.
The leakage current must not exceed 0.5mA.

(F)
"Pour votre sécurite, ces documents doivent être utilisés par des spécialistes agrées, seuls habilités à réparer votre appareil en panne".

TECHNICAL SPECIFICATIONS

GENERAL

Mains voltage	-/00	230 V
	-/01	120/230 V
	-/17	120 V
Ext. car battery		12 V
Mains frequency	-/00	50 Hz
	-/01	50 / 60 Hz
	-/17	60 Hz
Power consumption	standy	10 W
	mains	70 W
	Ext. DC	35 W
Dimension (W x H x D)		328 x 557 x 296 mm
Weight		10 Kg

AMPLIFIER

Output power	long term	2 x 30 W
	short term	2 x 50 W
Speaker impedance	bass	1 x 4 ohm
	treble	1 x 4 ohm
Frequency response		80 Hz - 19 kHz (±3dB)

AUDIO CASSETTE RECORDER

Number of tracks		2 stereo
Tape speed		4.76 cm/sec ± 3%
Wow & flutter		< 0.48 % JIS UWTD
Fast wind/rewind C60		< 110 sec.
Frequency response	P/B	80 - 10 kHz
S/N ratio		> 45 dB

COMPACT DISC

Frequency response		30 Hz - 18 kHz
S/N ratio		> 60 dB
Channel difference	1 kHz	< 3 dB
Channel crosstalk	1 kHz	> 40 dB
Channel crosstalk	10 kHz	> 30 dB

SERVICE TOOLS

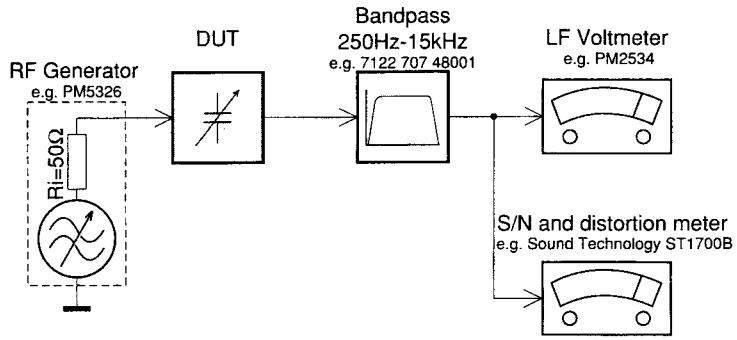
TORX T10 screwdriver with shaftlength 150mm 4822 395 50423
TORX screwdriver set SBC 163 .....4822 295 50145

Audio signal disc SBC 429 .....4822 397 30184
Playability test disc SBC 444 .....4822 397 30245
Test disc 5 (disc without errors) +
Test disc 5A (disc with dropout errors, black spots and fingerprints)
SBC 426/426A 4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30 dB level without "pause") ...4822 397 30155

Universal test cassette Fe SBC 420 .....4822 397 30071

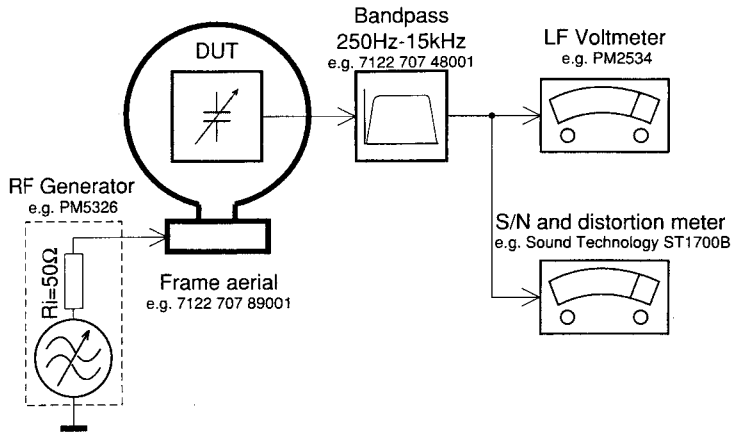
SERVICE MEASUREMENTS

Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilottone (19kHz, 38kHz).

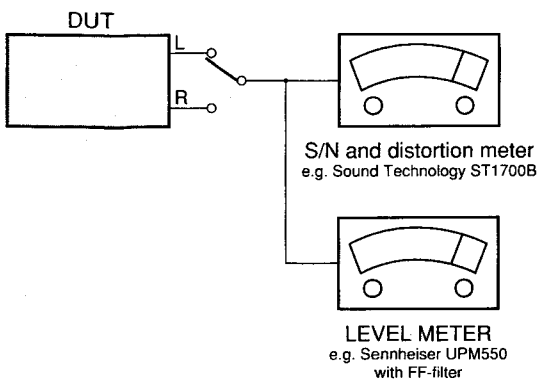
Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday´s cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

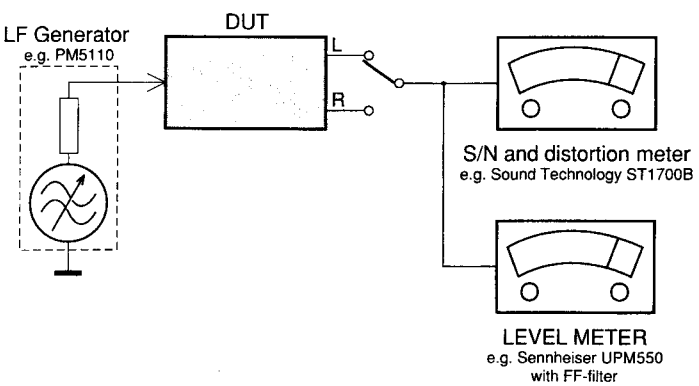
CD

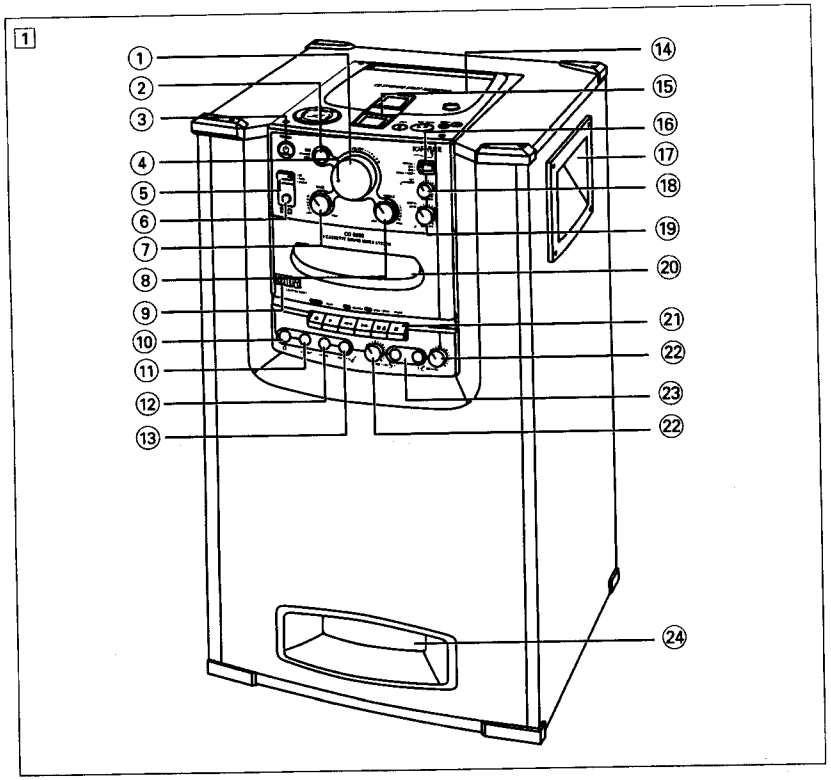
Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)

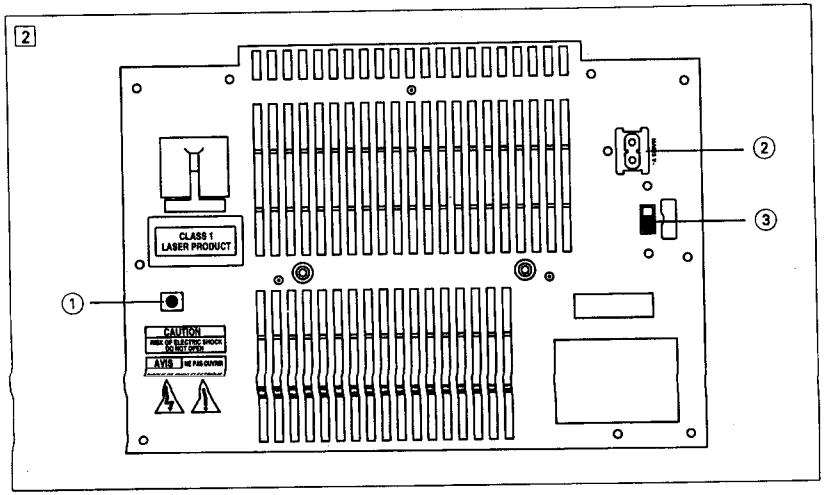


RECORDER

Use Universal Test Cassette **Fe** SBC420 4822 397 30071







TOP AND FRONT PANELS
See fig. 1

① **VOLUME** - to adjust the volume level.

② **DBB** - for an enhanced Dynamic Bass Boost.

③ **POWER** ⏻ - to switch the set on/off.

④ **Power indicator** - lights up when the set is switched on.

⑤ **CD/TAPE/LINE IN** - to select the sound source.

⑥ **REMOTE SENSOR** - infrared sensor for remote control.

⑦ **BASS** - for adjusting the bass (low) tones,

⑧ **TREBLE** - to adjust the treble (high) tones.

⑨ **Counter** to monitor and locate cassette tape passages.
COUNTER RESET - to reset the tape counter.

⑩ 🎧 - headphone socket.

⑪ **LINE OUT** - stereo output to an external amplifier, tape deck, etc.

⑫ **LINE IN** - stereo input for connection of an external source tape deck, CD player, etc.

⑬ **GUITAR IN** - input socket for an electric guitar, piano, synthesizer, etc.

⑭ **CD PLAYER:**
OPEN - to open/close the CD door.
STOP ■ - to stop playback or erase a programme.
PLAY•PAUSE ▶ **II** - to start or interrupt CD play.
SEARCH ⏮ or ⏭ - to search backwards and forwards within a track;
to skip to the beginning of a current/previous or subsequent track.
SHUFFLE - to play CD tracks in random order.
PROGRAM - to programme tracks and to review the programme.
REPEAT - to repeat a track/CD programme/entire CD.

⑮ **Display** - to show the status of the CD player and any active KEY CHANGER adjustments.

⑯ ***KARAOKE mode*** - to select one of the following modes:
NORMAL - for normal playback of CDs and tapes.
CH 1/CH 2 - *(for special karaoke CDs and tapes only)* to select right or left channel playback: the original vocals or music can be completely omitted during playback.
VOCAL FADER - for suppressing the original vocals during playback on CD/TAPE/LINE IN modes.

⑰ **Handle**

⑱ **KEY CHANGER** - for changing the key of the music during playback on CD/TAPE/LINE IN modes.

⑲ **DIGITAL ECHO** - to adjust the microphone's echo effect.

⑳ **Cassette compartment**

㉑ **CASSETTE RECORDER keys:**
RECORD ● - to start recording.
PLAY ▶ - to start playback.
SEARCH:
REV/◀◀ - to fast review/rewind the tape.
CUE/▶▶ - to cue/fast wind the tape.
STOP•OPEN ■ ⏏ - to stop the tape and to open the cassette holder.
PAUSE II - to interrupt recording or playback.

㉒ **MIC 1** or **2 VOL** - to adjust the volume of the respective microphone.

㉓ **MIC 1** or **2** - microphone input.

㉔ **Bass port**

BACK PANEL *See fig.* 2

① **Ext. DC** - 5.5 mm socket for 12 V car battery adapter.

② **AC MAINS** - socket for mains lead.

③ **Voltage Selector** - to select 120/230 V.

MAINS

AC Power consumption

Set in **standby mode**: 6-7 Watts

Unplug your set from the wall socket overnight, or when not in use to save energy.

12 V Car Battery Use

A special car battery cable is required available from your dealer or service centre.

- Insert the cable into the Ext. DC socket at the back of the set first and then connect to the cigarette lighter socket.
  (Only for a 12 V car battery with negative grounding.)

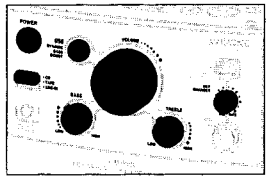
Environmental information

All redundant packaging material has been omitted. We have done our utmost to make the packaging easily separable into three mono materials: cardboard (box), expandable polystyrene (buffer) and polyethylene (bags, protective foam sheet).

Your set consists of materials which can be recycled if disassembled by a specialized company. Please observe the local regulations regarding the disposal of packaging materials, exhausted batteries and old equipment.

GENERAL OPERATION

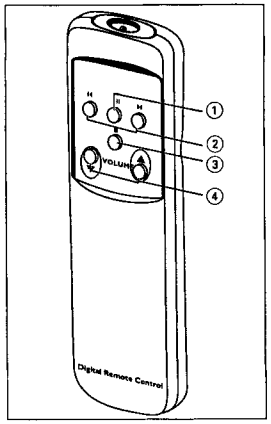
1. To switch on the set, press the POWER button.
   → The power indicator of the set lights up.
2. Adjust the CD/TAPE/LINE IN selector to the desired position to select your sound source.
3. Adjust the sound using the VOLUME, TREBLE and the BASS or DBB controls.
4. If desired, you can also adjust the key of the CD/TAPE/LINE IN playback by using the KEY CHANGER.
5. To switch off the set, press the POWER button.
   → The power indicator on the set goes out



BASS Control Notes:

- *The DBB and BASS controls are mutually exclusive functions. If the DBB function is activated, the BASS function is cancelled.*
- *The BASS level setting is automatically reduced if the volume is adjusted higher than half the maximum. This is a built-in safety mechanism to prevent distortion.*

REMOTE CONTROL



① ▶ II - to start or interrupt CD playback.

② ⏮ - To skip to a previous track/the beginning of a track.
⏭ - To skip to a next track.

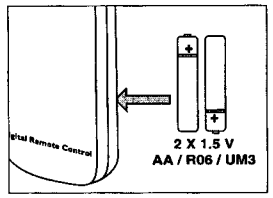
③ ■ - to stop playback or erase a CD programme.

④ **VOLUME ▲** - to increase the volume level.
VOLUME ▼ - to decrease the volume level.

Remote control batteries (included)

1. Open the battery compartment and insert as shown two batteries, type AA, R06 or UM3 (preferably alkaline).
2. Replace the compartment door, making sure the batteries are firmly and correctly in place. The set is now ready to operate.

- ***Important!*** Remove the batteries if exhausted or if they will not be used for a long period.
- The incorrect use of batteries can cause electrolyte leakage and will corrode the compartment or cause the batteries to burst. Therefore:
  – Do not mix battery types, e.g. alkaline with zinc carbonate.
  – When inserting new batteries, replace both the (old) batteries in use at the same time.

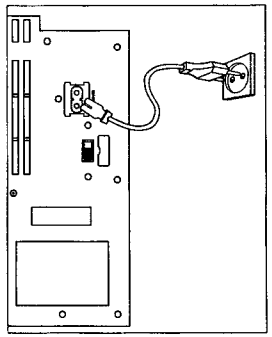


Batteries contain chemical substances, so they should be disposed of properly.

MAINS

1. Check if the mains voltage as shown on the type plate (on the back of the set) corresponds to your local mains voltage. If it does not, consult your dealer or service organisation.
2. If your set is equipped with a voltage selector, adjust the selector to match with your local mains supply.
3. Connect the mains lead to the MAINS socket and the wall socket.
   → The set is now ready to use.
4. To switch off the mains supply completely, pull the mains plug out of the wall socket.
   For users in the U.K.: *please follow the instructions on page 2.*

   Environmental Note: Save Energy.

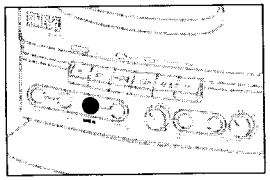


Switching POWER on/off

Always release the POWER button to the off position when not using the set.

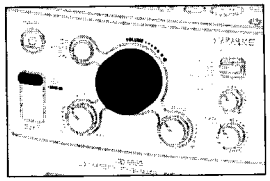
To avoid overheating of the set a safety circuit has been built in. Therefore your set may disconnect under extreme conditions. If this happens, switch off the set and let it cool down before further operation.

LINE IN

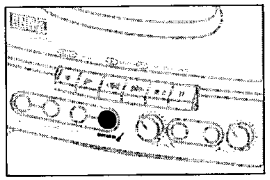


For amplifying or recording from an external CD player, amplifier, tuner, recorder, electric musical instruments, etc. A connection cord with a 6.35 mm jack may be required for the connection.

1. Connect the connection cord from the LINE IN socket of the set to the LINE OUT socket of the external source.
- The connection cords should be fully inserted into the LINE IN and LINE OUT sockets of the respective sets.
2. Set the source selector to LINE IN on the Sound Mixer.
3. To adjust the sound of your connected external source, use the VOLUME,TREBLE, BASS or DBB controls located on the Sound Mixer.



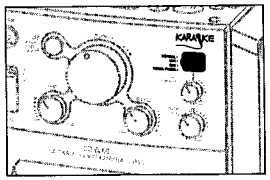
GUITAR IN



For amplifying or recording from an electric guitar or musical instrument. The GUITAR IN signal can also be mixed with the CD/TAPE/LINE IN sources. A 6.35 mm jack may be required for the GUITAR IN connection.

- Connect the connection cord from the musical instrument to the GUITAR IN socket of the set.
- Adjust the volume using the controls on the musical instrument.

KARAOKE MODE FEATURES



CH 1 and CH 2

Special karaoke CDs and tapes are pre-recorded to enable two modes of playback: the vocal mode or the instrumental mode.

- Adjust the karaoke mode selector to either CH 1 or CH 2 to select the desired mode.

NORMAL

This allows you to listen to the original recording of Karaoke CDs/ tapes without channel selection.

- Adjust the karaoke mode selector to NORMAL.

VOCAL FADER

This function suppresses the main vocals during playback and can be used in all three different source modes: CD, TAPE and LINE IN.

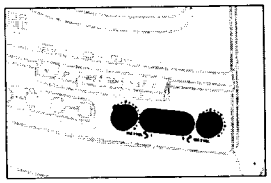
- Adjust the karaoke mode selector to VOCAL FADER.
  → The original vocals will now become faintly audible.

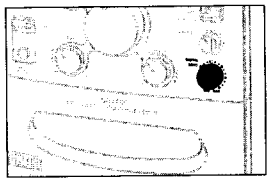
HEADPHONES

For headphones with a 6.35 mm socket.

→ When headphones are inserted into the 🎧 socket, the speaker system is automatically disconnected.

MICROPHONE CONNECTION *(1 x Philips microphone supplied)*



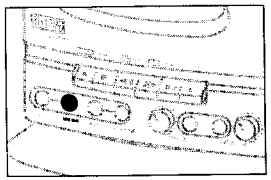


For microphones with a 6.35 mm socket. You can reproduce and also mix your voice with CD's, cassettes, a line in source or a guitar! You can also use two microphones for a karaoke duet or microphone mixing function.

1. Before you plug in the microphone, turn the respective MIC 1 or 2 VOL control to minimum volume to prevent acoustic howling.
2. Connect your microphone to the MIC 1 or 2 socket and switch on the microphone.
3. Adjust the microphone volume to your desired level with the respective MIC 1 or 2 VOL control.
4. If desired, adjust the ECHO control to create a resonance effect.
- Set ECHO to the minimum level if you do not wish to apply the ECHO effect.

Note: *When using the microphone, position it so that it is directed away from the speaker system to prevent acoustic howling.*

LINE OUT



For amplifying or recording on an external source e.g. mini Hi-fi system, etc. A connection cord with a 6.35 mm jack may be required for the connection.

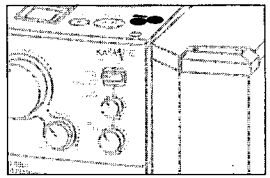
1. Connect the connection cord from the LINE OUT socket of the set to the LINE IN socket of the external source.
- The connection cords should be fully inserted into the LINE OUT and LINE IN sockets of the respective sets.
2. To adjust the volume of your connected external source, use the volume control located on the external source.

PLAYING A CD

Note: CD playback will also stop when:

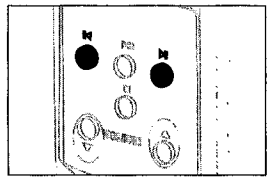
- the CD door is opened;
- the CD has reached the end;
- you adjust the CD/TAPE/LINE IN selector to TAPE or LINE IN mode;
- you press the POWER button;
- an error has occurred.

SEARCH ⏮ or ⏭



Selecting a different track

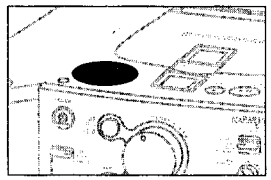
- On the set, press SEARCH ⏮ or ⏭ once or repeatedly until the required track number appears in the display. Alternatively, on the remote control press ⏮ or ⏭ once or more to select the required track.
- If you have selected a track number shortly after loading a CD or in the PAUSE position, you will need to press PLAY•PAUSE ▶II to start playback.



Searching for a passage within a track

1. On the set, press and hold down SEARCH ⏮ or ⏭.
   → The CD is played at high speed and low volume.
2. When you recognize the passage you want, release the SEARCH ⏮ or ⏭ controls.
   → Normal CD playback will resume at this point.

Different play modes: SHUFFLE/REPEAT



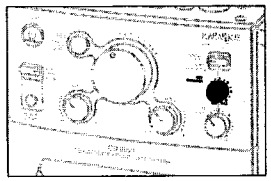
You can select and change the different play modes before or during playback.
→ The play modes can also be combined with PROGRAM
SHUFFLE - Tracks of the entire CD or the programme are played in random order.
SHUFFLE REPEAT ALL - To repeat the entire CD or programme continuously in random order.
REPEAT ALL - Repeats the entire CD.
REPEAT (SHUFFLE REPEAT) - Plays the current (random) track continuously.

1. Press SHUFFLE/REPEAT before or during playback until the desired function appears on the display.
2. To leave the REPEAT/SHUFFLE mode, press the respective SHUFFLE or REPEAT button repeatedly until the various REPEAT/SHUFFLE modes are no longer shown on the display.
   → You can also press STOP ■ to quit playback.

KARAOKE MODE FEATURES

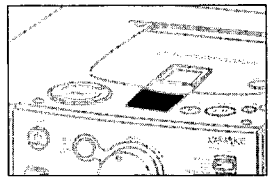
KEY CHANGER

During playback of CDs, cassettes and LINE IN sources, you can use the KEY CHANGER to change the key of the music to suit your voice. The selected key information will be shown briefly in the display as a two digit number from 00-06.



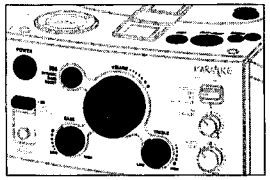
- To adjust the key of the original singer and music to match your voice, turn the control clockwise from the centre position (00) for a range of six higher keys (01 - 06).
- Turn anti-clockwise if you want a lower key (01 - 06).
- If you do not wish to alter the original key, set the KEY CHANGER to the centre position.
  → In addition to the '00' display indication, a small click can be felt indicating the centre position when turning the control.

CD DISPLAY INDICATION



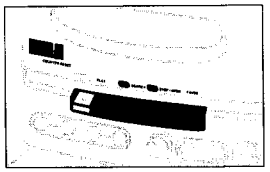
Cd: When you select the CD mode/open the CD compartment.
no: when no disc inserted/ CD programme is erased/ error in CD operation or with the CD (see Troubleshooting)
Total track number: in stop mode or at the end of a CD programme/ playback.
▶ *and the current track number:* during playback.
▶ II *and the current track number:* CD functions and the display freezes in pause position.
SHUFFLE/REPEAT (ALL) *modes:* when the respective mode is activated
PROGRAM: when programme mode active.
***P*:** when you store a track.
***F*:** memory full, no further tracks can be programmed.

CD PLAYBACK



1. Adjust the CD/TAPE/LINE IN selector to CD position.
2. Press OPEN to open the CD player compartment
3. Insert the CD, printed side facing up and push down on the CD door to close.
4. Start playback by pressing PLAY•PAUSE ▶II.
5. Adjust the sound using the VOLUME, TREBLE and the BASS or DBB controls.
6. To interrupt playback, press PLAY•PAUSE ▶II. Press PLAY•PAUSE ▶II again to continue playback.
7. Press STOP ■ to stop CD playback.
8. To switch off the set press the POWER button.

CASSETTE PLAYBACK



8. In the stop position, press SEARCH ◀◀ or ▶▶, to fast wind the tape in the respective direction.
- To review/cue, during playback press and hold down on the respective ◀◀ SEARCH ▶▶ key to hear tape playback at high speed. Release your finger from the key to return to normal playback.

9. To stop fast winding or to stop the tape, press STOP•OPEN ■ ▲.
→ The keys are automatically released at the end of the tape.
→ Always make sure that the PLAY ▶ key is released when you are not using the cassette deck.

10. To switch off the set, release the POWER button.

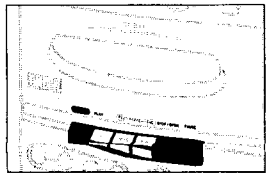
CASSETTE RECORDING

General information on cassette recording

- Recording is permissible insofar as copyright or other rights of third parties are not infringed.
- This deck is ***not*** suited for recording on METAL (IEC IV) type cassettes. For recording you should use NORMAL type cassettes (IEC I) or CHROME (IEC II) type cassettes on which the tabs have not been broken.
- The recording level is set automatically. Altering the VOLUME, BASS, TREBLE or DBB controls will not affect the recording in progress.
- No recording will take place during the first 7 seconds, when the leader tape passes the recorder heads.
- To prevent the accidental erasure of a recording, keep the cassette side to be safeguarded in front of you and break out the left tab. Recording on this side is no longer possible. To render this safeguard ineffective, cover the tabs with a piece of adhesive tape.
- If you do not wish to use the microphone, GUITAR IN, or LINE IN in your recording, disconnect these sources to avoid accidental mixing with the recording source.
- Do not press the SEARCH ◀◀ or ▶▶ keys during recording.

Basic recording operation

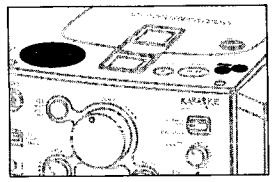
The following six steps apply to all source recordings.



1. Select your source of sound for recording (CD, TAPE, LINE IN).
2. Press STOP•OPEN ■ ▲ to open the cassettte holder.
3. Insert a blank cassette into the cassette deck and shut the cassette holder.
4. Press RECORD ● to start recording.
5. For brief interruptions, press PAUSE ❚❚. To resume recording, press PAUSE ❚❚ again.
6. To stop recording press STOP•OPEN ■ ▲.

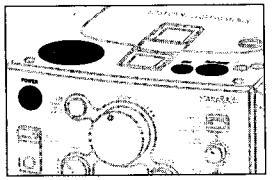
PROGRAMMING TRACK NUMBERS

Before or during playback, select and programme your CD tracks in the desired sequence. You can store any track more than once. Up to 20 tracks can be stored in the memory.
- When the programme memory is full, the display will show ***F*** and it will not be possible to add further tracks to your current programme.



1. Select the desired track using SEARCH ⏮ or ⏭ until the display shows the desired track number.
2. Press PROGRAM to confirm the track number to be stored.
→ The display will briefly show ***P***.
3. Repeat steps 1 and 2 to select and store all desired tracks in this way.

Reviewing your programme



- To review your set programme, keep PROGRAM pressed for 2 seconds and the display will show your stored track numbers in sequence.

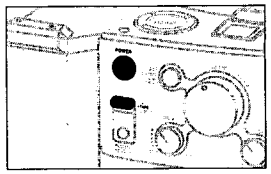
Playing your programme

- If you have programmed in the STOP position, press PLAY•PAUSE ▶ ❚❚ to start playback.
- If you have programmed in the play mode, first press STOP ■ and then PLAY•PAUSE ▶ ❚❚ to start playback.

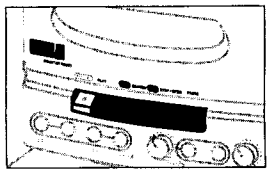
Erasing a programme

You can erase a programme by:
- pressing STOP ■ twice;
- opening the CD door;
- pressing the POWER button;
- changing the sound source.

CASSETTE PLAYBACK



1. Adjust the CD/TAPE/LINE IN selector to TAPE position.
2. Press STOP•OPEN ■ ▲ to open the cassette holder.
3. Insert a recorded cassette and shut the cassette holder.
4. Press PLAY ▶ and playback will start.
5. Adjust the sound using the VOLUME, TREBLE and the BASS or DBB controls.
6. For brief interruptions, press PAUSE ❚❚. Press PAUSE ❚❚ again to resume playback.
7. During playback or fast winding, you can watch the 3 digit Counter to help you find and locate a desired passage.
- Press the COUNTER RESET switch to reset the counter to 000.



If a fault occurs, first check the points listed below before taking the set for repair.
If you are unable to remedy a problem by following these hints, consult your dealer or service centre.

WARNING: Under no circumstances should you try to repair the set yourself, as this would invalidate the guarantee.

PROBLEM
– *POSSIBLE CAUSE*
• REMEDY

No sound/power
– *VOLUME is not adjusted.*
• Adjust the VOLUME.
– *Headphones are connected.*
• Disconnect headphones.
– *Mains lead is not securely connected.*
• Connect the mains lead properly.
– *Connection with car battery loose.*
• Check connection

CD playback does not work
– *CD is badly scratched or dirty.*
• Replace or clean the CD, see Maintenance.
– *Laser lens steamed up*
• Wait until lens has acclimatized
– *CD inserted upside down.*
• Insert CD the right way.
– *Wrong mode*
• Set the source selector CD/TAPE/LINE IN to CD

The CD skips tracks
– *CD is damaged or dirty.*
• Replace or clean the CD.
– *PROGRAM/SHUFFLE is active.*
• Switch off the PROGRAM/SHUFFLE function.

No reaction to operation of any controls/display does not function properly
– *Electrostatic discharge.*
• Disconnect the set from power supply, reconnect after a few seconds.

Poor cassette sound quality
– *Dust and dirt on the heads, capstan or pressure roller.*
• Clean the heads etc., see Maintenance.
– *Use of incompatible cassette type (METAL).*
• Only use NORMAL or CHROME for recording.
– *KEY CHANGER has been adjusted.*
• Return KEY CHANGER to centre (0) position.
– *VOCAL FADER active.*
• Adjust Karaoke Mode switch back to NORMAL.

Recording does not work
– *Cassette tab(s) may be broken out.*
• Apply a piece of adhesive tape over the missing tab space.

Remote control does not function properly
– *Batteries are exhausted.*
• Insert new batteries.
– *Batteries are incorrectly inserted.*
• Insert batteries correctly.
– *Distance or angle between the set is too large.*
• Reduce the distance or angle.

Howling noise when using microphone
– *Acoustic interference with speaker system.*
• Reduce MIC 1 or 2 VOL or direct microphone away from speaker system.

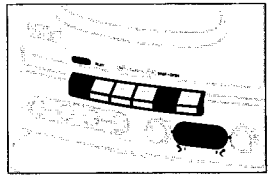
Microphone does not work
– *Microphone not switched on*
• Switch on microphone.
– *MIC VOL of corresponding MIC 1 or 2 not adjusted.*
• Turn up MIC VOL of corresponding MIC.

This product complies with the radio interference requirements of the European Community
The type plate is located at the back of the set.

CASSETTE RECORDING

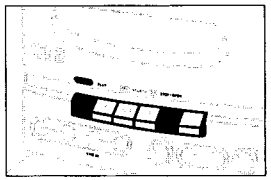
Sound Mixing, Microphone and Karaoke recording

For the musically ambitious you can play an electric guitar, a LINE IN source, sing along to a karaoke CD and if desired, use the KEY CHANGER and ECHO functions and record all this on tape.



1. Connect a microphone to the MIC 1 or 2 socket, as described under Microphone Connection.
2. Select your sound source for mixing (CD, TAPE, LINE IN).
3. Insert a blank cassette into the cassette deck and shut the cassette holder.
4. Press RECORD ● to start recording.
5. To stop recording press STOP•OPEN ■ ▲.

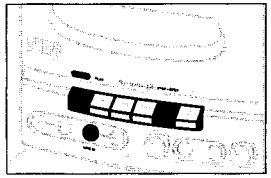
Synchro start CD recording



1. Adjust the CD/TAPE/LINE IN selector to CD position.
2. Insert a CD and if desired, programme track numbers.
3. Press STOP•OPEN ■ ▲ to open the cassettte holder.
4. Insert a blank cassette into the cassette deck and shut the cassette holder.
5. Press RECORD ● to start recording.
   → Playing of the CD programme starts automatically from the beginning of the programme. It is not necessary to start the CD player separately.

   To select and record a particular passage within a track:
   a. press the SEARCH controls ⏮ or ⏭ on the CD player to find your passage
   b. put the CD player on pause at the selected passage.
   c. recording will begin from this exact point in the track when you press RECORD ●.
6. To stop recording press STOP•OPEN ■ ▲.

Recording from LINE IN sources

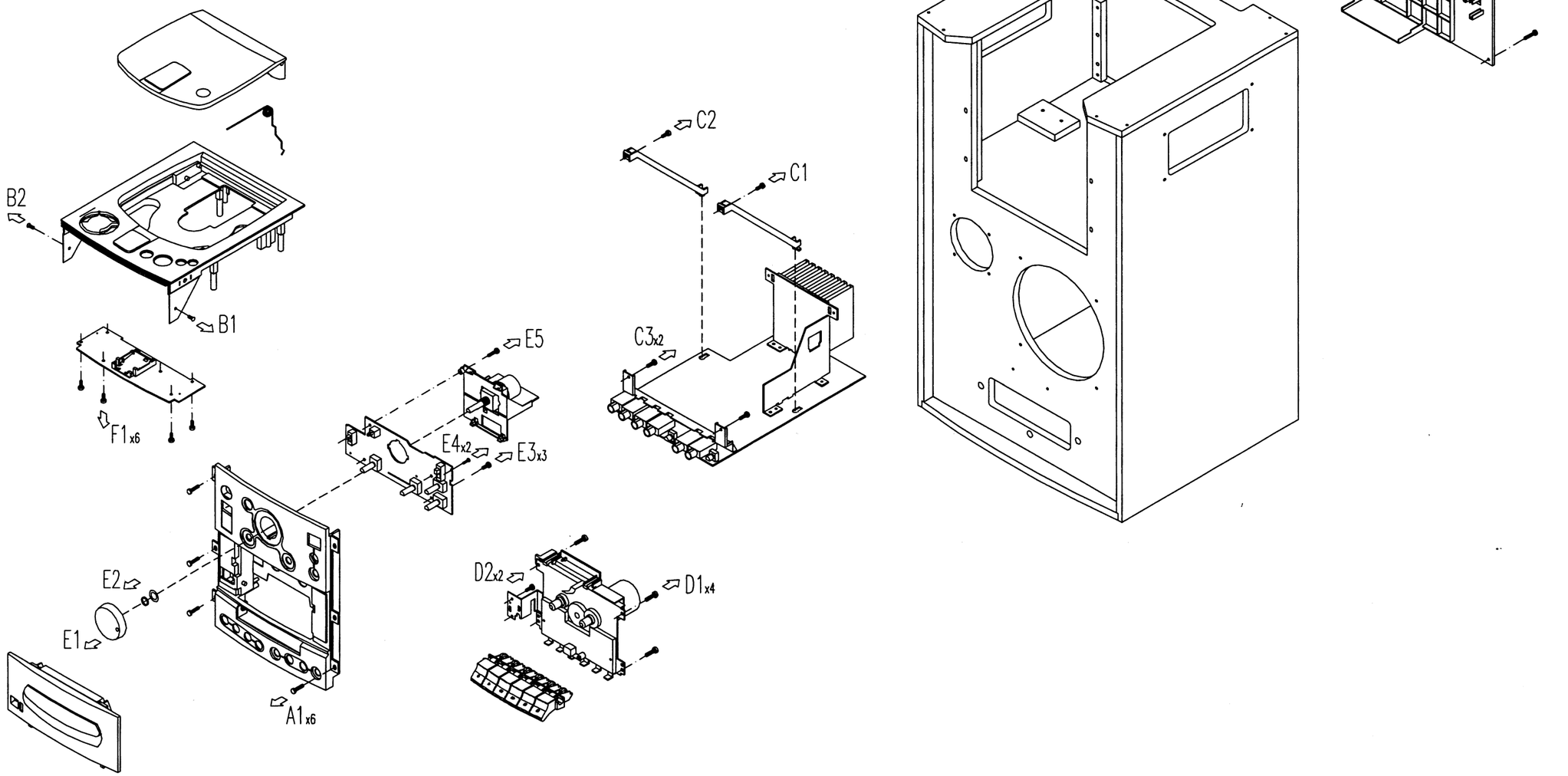


1. See the previous chapter on LINE IN to connect the LINE IN of the Sound Mixer with the LINE OUT of the external source.
2. Set the source selector to LINE IN.
3. Insert a blank cassette into the cassette deck and shut the cassette holder.
4. Press RECORD ● to start recording.
5. To stop recording press STOP•OPEN ■ ▲.

4-1

DISASSEMBLY DIAGRAM

A. To remove Front Panel Assembly
B. To remove Top Cabinet
C. To remove Power Board
D. To remove Tape Deck
E. To remove AF Board
F. To remove Control Board



CD - SERVICE TESTPROGRAM

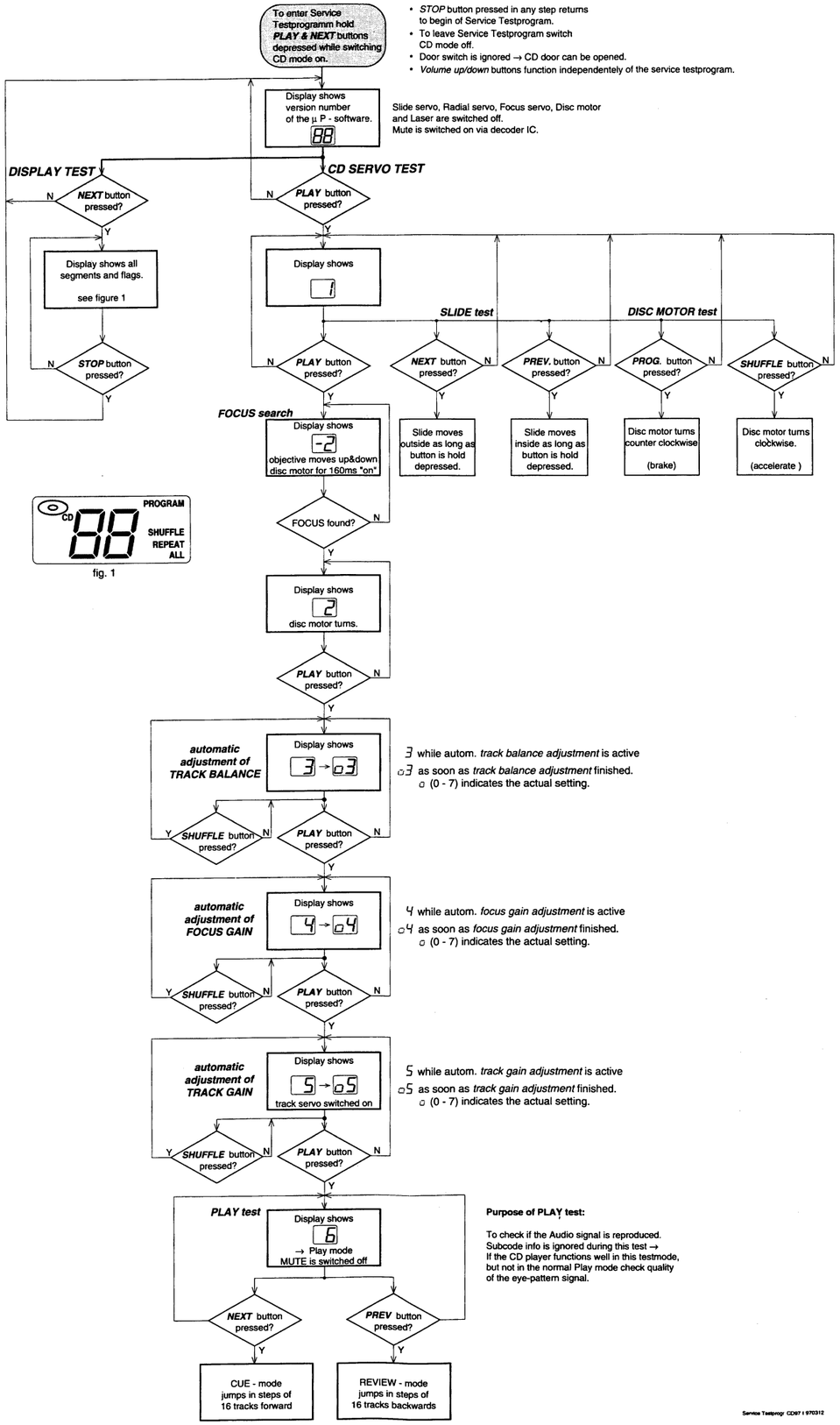

To enter Service Testprogramm hold PLAY & NEXT buttons depressed while switching CD mode on.
Display shows version number of the µ P - software.
88
Slide servo, Radial servo, Focus servo, Disc motor and Laser are switched off.
Mute is switched on via decoder IC.
DISPLAY TEST
CD SERVO TEST
NEXT button pressed?
PLAY button pressed?
Display shows all segments and flags.
see figure 1
STOP button pressed?
Display shows
1
SLIDE test
DISC MOTOR test
PLAY button pressed?
NEXT button pressed?
PREV. button pressed?
PROG. button pressed?
SHUFFLE button pressed?
FOCUS search
Display shows -2 objective moves up&down disc motor for 160ms "on"
Slide moves outside as long as button is hold depressed.
Slide moves inside as long as button is hold depressed.
Disc motor turns counter clockwise (brake)
Disc motor turns clockwise. (accelerate)
FOCUS found?
Display shows 2 disc motor turns.
automatic adjustment of TRACK BALANCE
Display shows 3 → o3
3 while autom. track balance adjustment is active
o3 as soon as track balance adjustment finished.
o (0 - 7) indicates the actual setting.
automatic adjustment of FOCUS GAIN
Display shows 4 → o4
4 while autom. focus gain adjustment is active
o4 as soon as focus gain adjustment finished.
o (0 - 7) indicates the actual setting.
automatic adjustment of TRACK GAIN
Display shows 5 → o5 track servo switched on
5 while autom. track gain adjustment is active
o5 as soon as track gain adjustment finished.
o (0 - 7) indicates the actual setting.
PLAY test
Display shows 6 → Play mode MUTE is switched off
NEXT button pressed?
PREV button pressed?
CUE - mode jumps in steps of 16 tracks forward
REVIEW - mode jumps in steps of 16 tracks backwards
PROGRAM
SHUFFLE
REPEAT
ALL

fig. 1

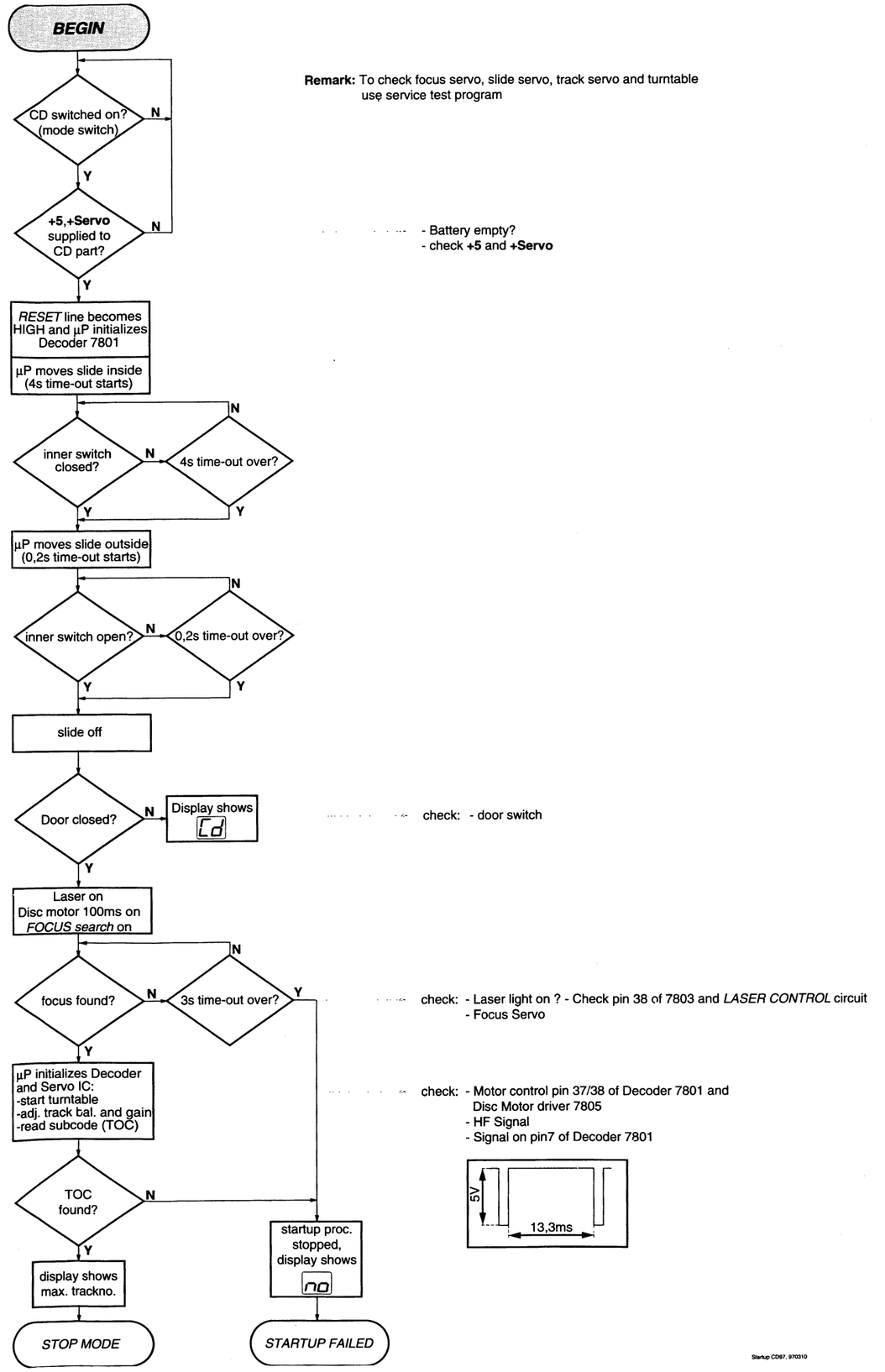
- *STOP* button pressed in any step returns to begin of Service Testprogram.
- To leave Service Testprogram switch CD mode off.
- Door switch is ignored → CD door can be opened.
- *Volume up/down* buttons function independentely of the service testprogram.

Purpose of PLAY test:

To check if the Audio signal is reproduced. Subcode info is ignored during this test → If the CD player functions well in this testmode, but not in the normal Play mode check quality of the eye-pattern signal.

Service Testprogr. CD97 i 970312

CD STARTUP - PROCEDURE



Remark: To check focus servo, slide servo, track servo and turntable use service test program

- Battery empty?
- check **+5** and **+Servo**

check: - door switch

check: - Laser light on ? - Check pin 38 of 7803 and *LASER CONTROL* circuit
- Focus Servo

check: - Motor control pin 37/38 of Decoder 7801 and Disc Motor driver 7805
- HF Signal
- Signal on pin7 of Decoder 7801

Startup CD97, 970310

Abbreviations and Pin-descriptions of CD ICs

SERVO PROCESSOR M62475FP

Pin	*Name*	*Direction*	*Description*
1-3	A, B, C	Diode array → Servo processor	Current input (central photo diode signal input)
4-5	E, F	Diode array → Servo processor	Current input (satellite photo diode signal input)
6	SGT	Servo processor → Track servo	Signal generator output to track servo, sends 1700Hz for adjustment procedure
7	TE -	-	Inverting input of trackerror amplifier
8	TEGain	-	Gain control pin of track error amplifier
9	TG1	-	Track Gain 1 - switch: controls the gain of the track servo amplifier
10	TE out	-	Track Error amplifier output
11	TC/Shock	-	Track Cross/Shock detector input
12	TS +	-	Non inverting input of track servo amplifier
13	TG2	not connected	Track Gain 2 - switch: controls the gain of the track servo amplifier
14	TS -	-	Inverting input of track servo amplifier
15	TS out	Servo processor → Servo driver	Output of track servo amplifier
16	SS +	-	Non inverting input of slide servo amplifier
17	SS -	-	Inverting input of slide servo amplifier
18	Slide out	Servo processor → Motor driver	Output of slide servo amplifier
19	DETFIL	-	Pin for connection of DETection FILter capacitor of *ADJUST LOGIC*
20	BIAS	Servo processor → external electronic	Reference Voltage output Vcc/2 of internal BIAS-generator
21	GND	-	Ground connection pin (negative supply)
22	MLA/DIS	µP → Servo processor	Serial interface Microprocessor LAtch control / DIScharge control for adjustment
23	JP1/SG	µP → Servo processor	Serial interface Jump control line / Signal Generator input line for adjustment
24	MCK	µP → Servo processor	Serial interface Clock input line
25	MSD	µP → Servo processor	Serial interface Data input line
26	Dout	Servo processor → µP	Serial interface Data output line
27	CLPF	-	Pin for connection of Low Pass Filter capacitor for *ADJUST LOGIC*
28	IREF	-	Reference current input
29	VCC	-	Positive supply connection pin (4V - 5.5V)
30	FSout	Servo processor → Servo driver	Output of focus servo amplifier
31	FS -	-	Inverting input of focus servo amplifier
32	FEGain	-	Gain control pin of focus error amplifier
33	FE -	-	Inverting input of focus error amplifier
34	SGF	Servo processor → Focus servo	Signal generator output to focus servo, sends 1300Hz for adjust. procedure
35	CFSR	-	Charge capacitor for Focus Search triangle-generator
36	APC +	-	Non inverting input of Automatic laser Power Control amplifier
37	APC -	-	Inverting input of Automatic laser Power Control amplifier
38	APC out	Servo processor → Laser driver	Output of Automatic laser Power Control amplifier
39	MRC	-	Connection pin for capacitor of Mirror detector
40	HF	Servo processor → Decoder	Output of HF amplifier
41	HFI	-	Inverting input of HF amplifier
42	ABC	-	Sum output of amplified A, B and C input (central photo diode signal input) to external ac-coupling capacitor

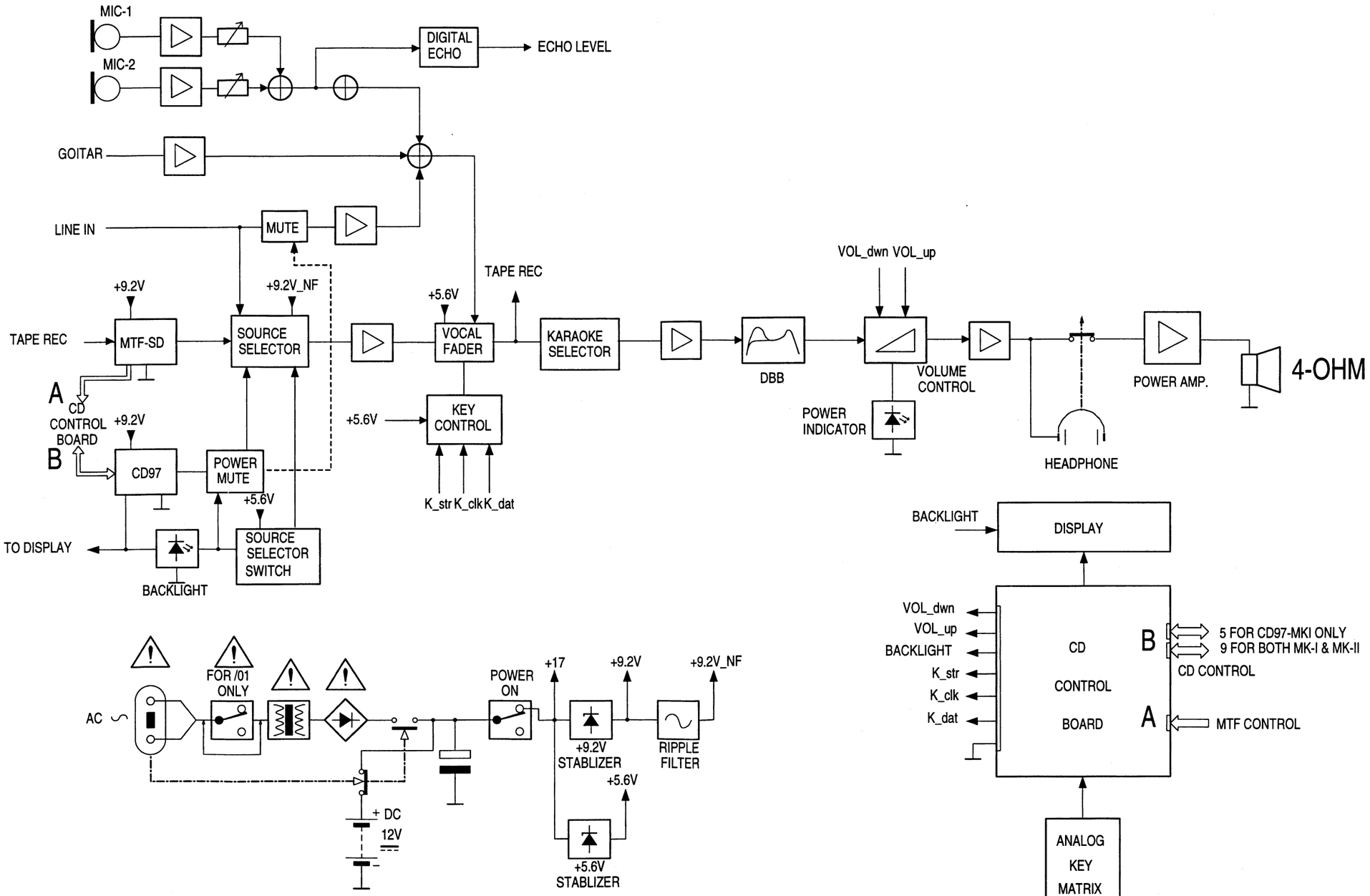
SIGNAL PROCESSOR M65821FP

Pin	*Name*	*Direction*	*Description*
1	VDD1	-	+supply for signal processor
2	EMP	not connected	Emphasis flag output
3	SYCLK	not connected	Frame synchronize output
4	LOCK	not connected	Low disc rotation detect output
5	SCAND	not connected	Subcode sync signal detection
6	CRCF	not connected	Subcode Q CRC check flag output
7	SBQS	Signal processor → µP	Interrupt signal to read out subcode Q data
8	MSD	µP ↔ Signal processor	Data line
9	RESET	Reset circuit → Signal processor	System reset
10	MCK	µP → Signal processor	Clock input
11	MLA	µP → Signal processor	Latch clock input
12-14	MODx	µP → Signal processor	Mode setting inputs (0,1,2)
15	VDD2	-	+supply for data slicer and VCO
16	IREF	-	Current reference
17	HFD	Signal processor → µP	HF signal detect
18	LPF	-	PLL loop filter
19	HF	Servo processor → Signal processor	HF signal input
20	TLC	-	Output from slice level control
21	VSS2	-	Ground
22	C846	not connected	8,4672MHz clock output
23	C423	Signal processor → µP	4,2336MHz clock outout
24	EST2	not connected	Error monitor output2
25	EST1	not connected	Error monitor output1
26	XI	X-Tal → Signal processor	Crystal oscillator input
27	XO	Signal processor → X-Tal	Crystal oscillator output
28	DOTX	not connected	Output of digital interface
29	DO1	Signal processor → DAC	Serial data output to DAC
30	DO2	not connected	Serial data output to Dual DAC
31	CKSEL	not connected	Crystal selector input. H=8MHz, L=16MHz
32	DSCK	Signal processor → DAC	Data shift clock
33	WDCK	Signal processor → DAC	Word clock
34	LRCK1	Signal processor → DAC	Left/Right clock
35-36	not used		Left/Right clock
37	PWM1	Signal processor → Motor driver	Disc motor driving (Pulse Width Modulation) output1
38	PWM2	Signal processor → Motor driver	Disc motor driving (Pulse Width Modulation) output2
39-41	not used		
42	VSS1	GND	Digital system ground

4-3

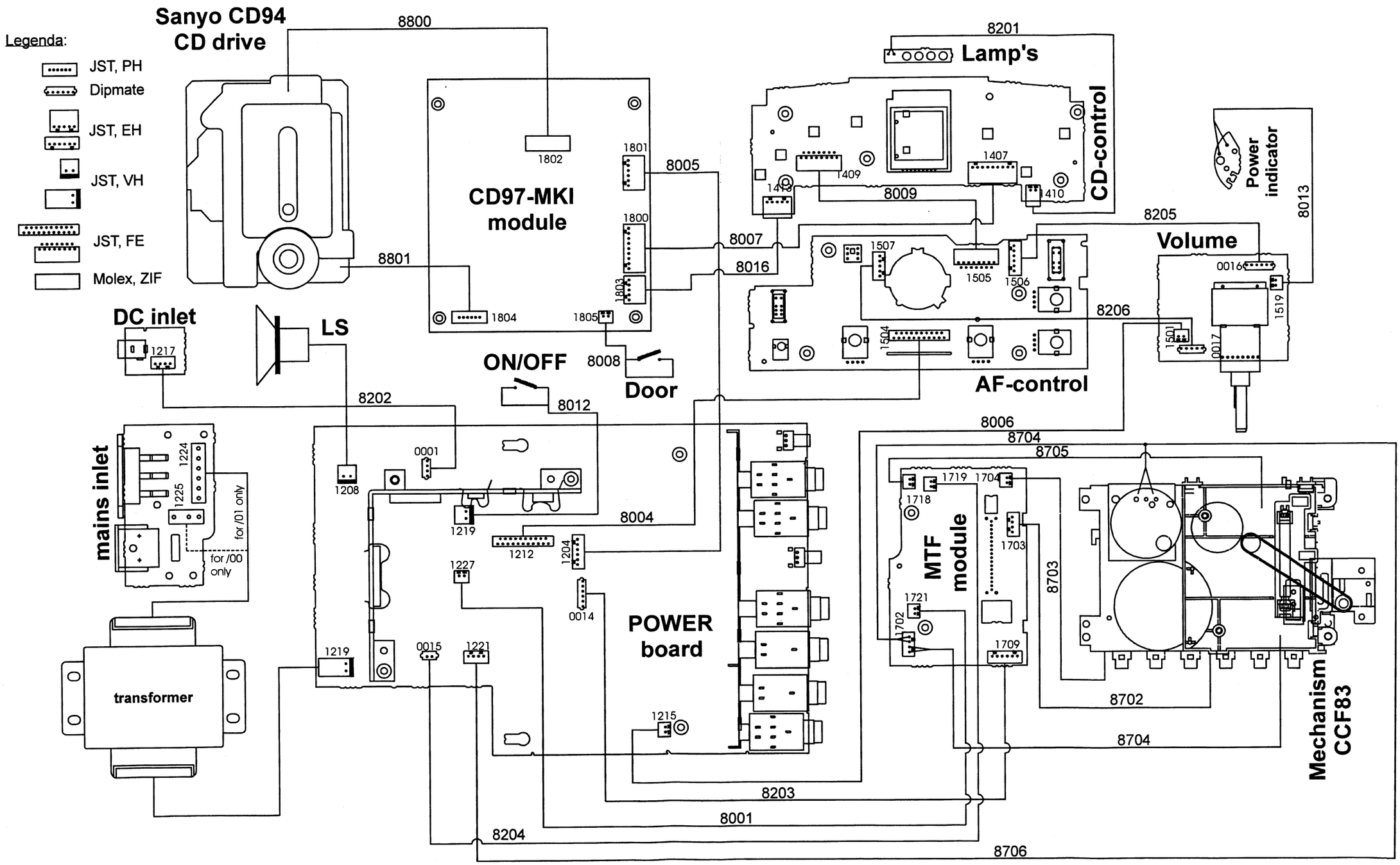
5-1

BLOCK DIAGRAM



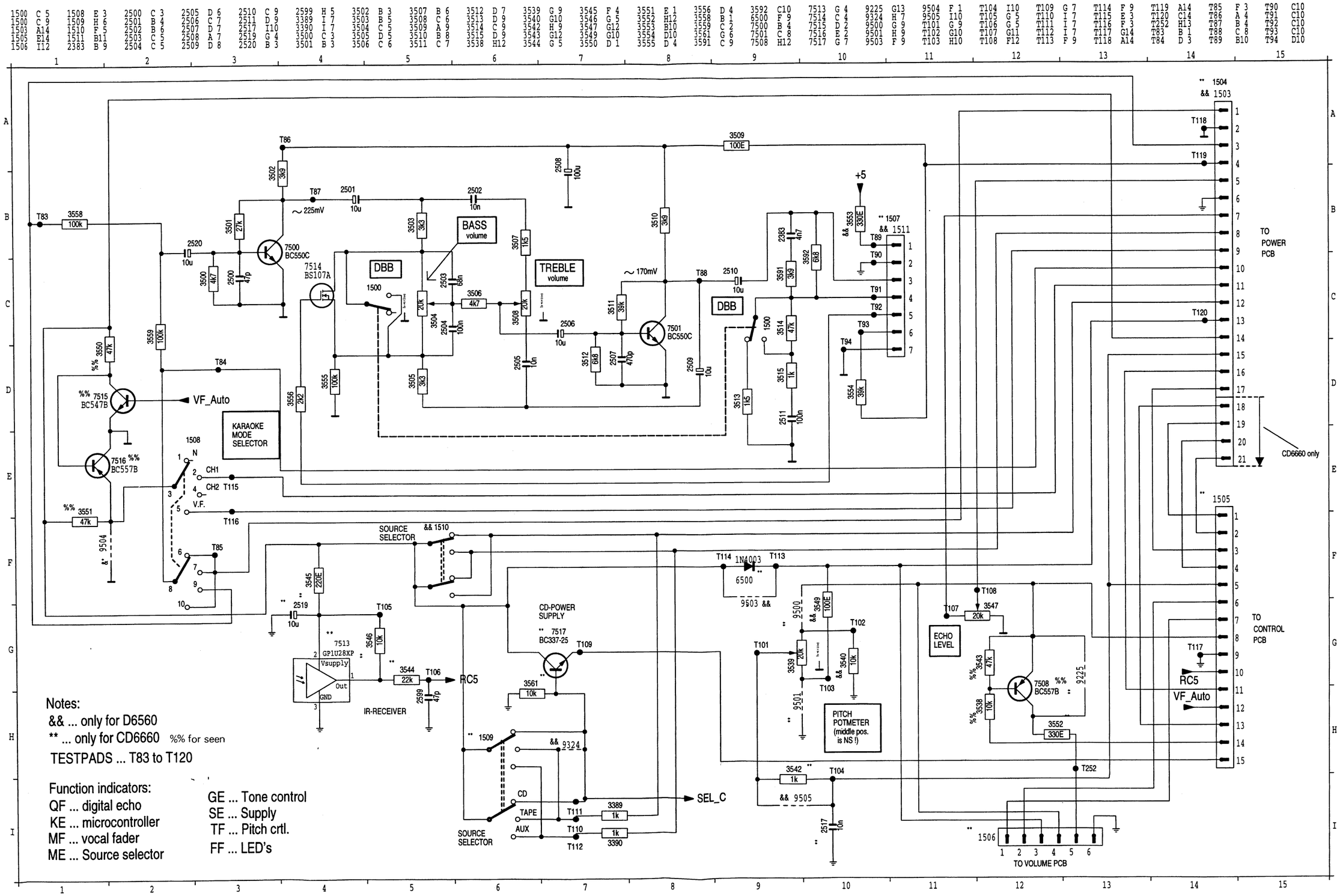
5-2

WIRING DIAGRAM



6-1

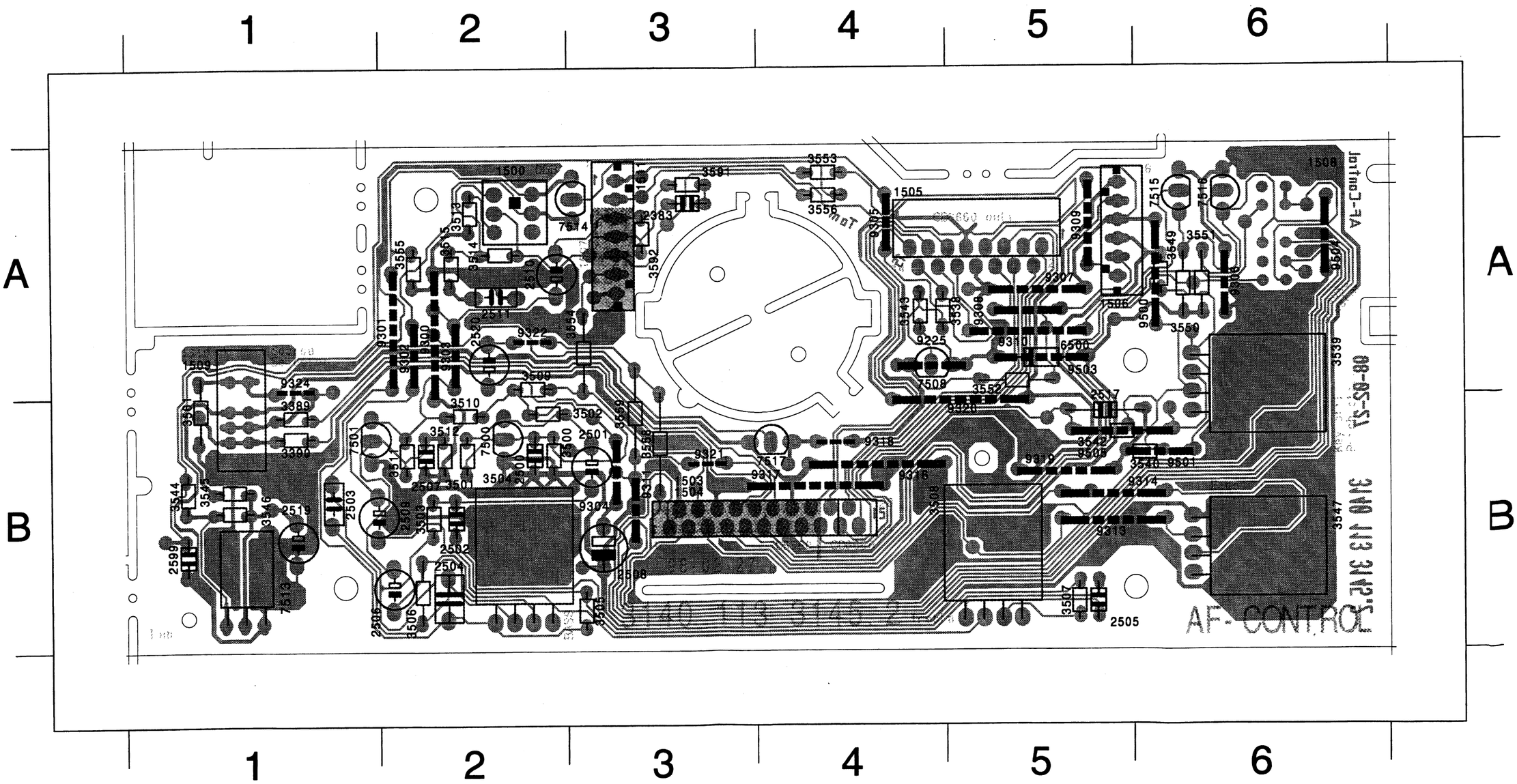
AF CONTROL BOARD - CIRCUIT DIAGRAM



6-2

AF CONTROL BOARD - LAYOUT DIAGRAM

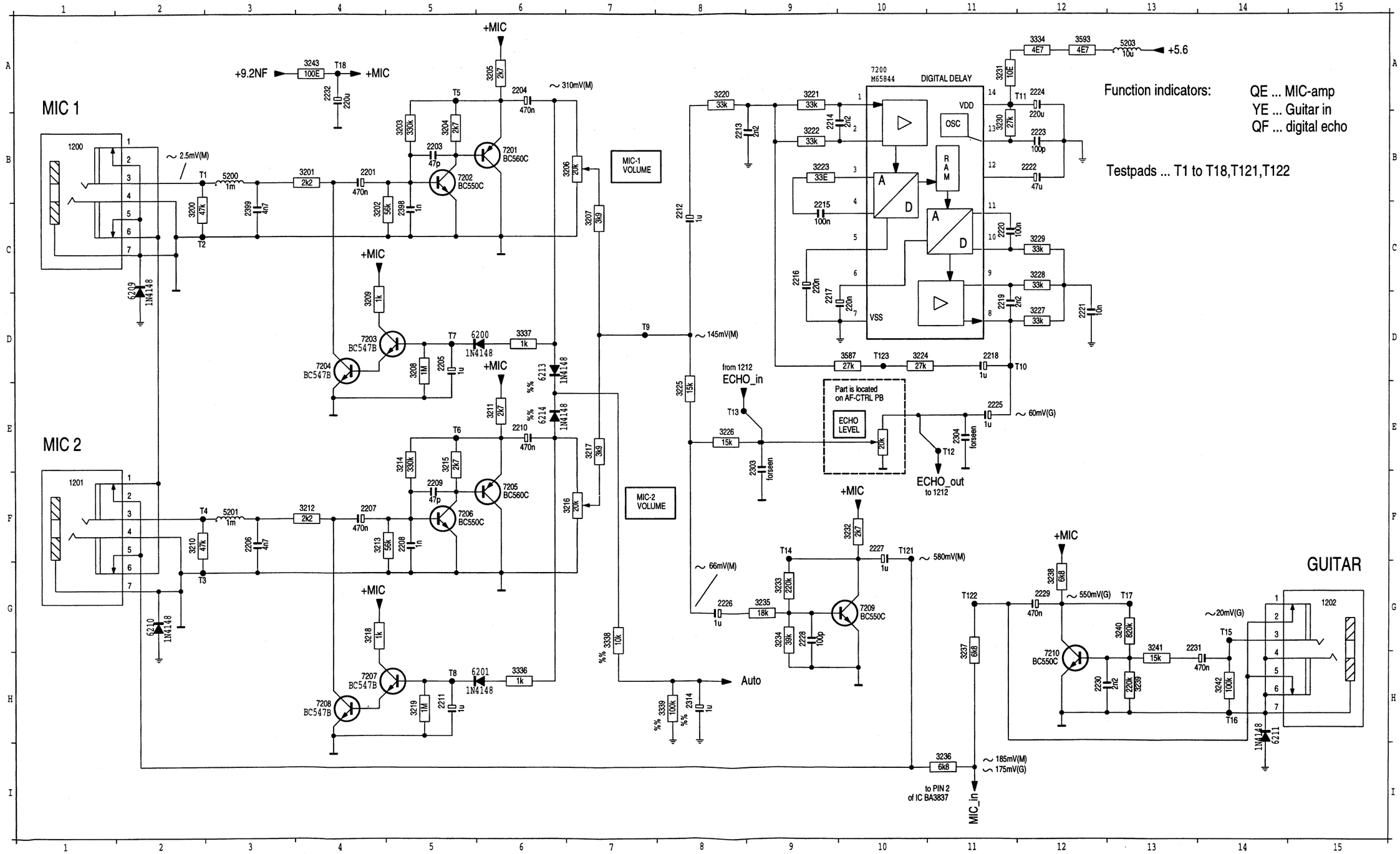
1500 A 2	2501 B 3	2510 A 2	3501 B 2	3510 B 2	3542 B 5	3552 A 5	3592 A 3	7517 B 4	9307 A 5	9318 B 4	9504 A 6	T90 A 3	T105 B 1	T114 A 5
1503 B 3	2502 B 2	2511 A 2	3502 B 2	3511 B 2	3543 A 4	3553 A 4	6500 A 5	9225 A 4	9308 A 5	9319 B 5	9505 B 5	T91 A 3	T106 B 1	T115 A 6
1504 B 4	2503 B 1	2517 B 5	3503 B 2	3512 B 2	3544 B 1	3554 A 3	7500 B 2	9300 A 2	9309 A 5	9320 B 5	T83 A 6	T92 A 3	T107 B 5	T116 A 6
1505 A 5	2504 B 2	2519 B 1	3504 B 2	3513 A 2	3545 B 1	3555 A 2	7501 B 1	9301 A 2	9310 A 5	9321 B 3	T84 B 3	T93 A 3	T108 B 5	T117 B 1
1506 A 5	2505 B 5	2520 A 2	3505 B 3	3514 A 2	3546 B 1	3556 A 4	7508 A 4	9302 A 2	9311 B 3	9322 A 2	T85 A 6	T94 A 3	T109 B 4	T118 B 3
1509 B 1	2506 B 2	2599 B 1	3506 B 2	3515 A 2	3547 B 6	3558 B 3	7513 B 1	9303 A 2	9313 B 5	9324 A 1	T86 B 3	T101 B 6	T110 A 1	T119 B 3
1511 A 3	2507 B 2	3389 B 1	3507 B 5	3538 A 4	3549 A 6	3559 B 3	7514 A 3	9304 B 3	9314 B 5	9500 A 6	T87 B 3	T102 B 5	T111 A 2	T120 B 5
2383 A 3	2508 B 3	3390 B 1	3508 B 5	3539 A 6	3550 A 6	3561 B 1	7515 A 6	9305 A 4	9316 B 4	9501 B 6	T88 A 2	T103 A 6	T112 B 1	T252 A 5
2500 B 2	2509 B 1	3500 B 2	3509 A 2	3540 B 6	3551 A 6	3591 A 3	7516 A 6	9306 A 6	9317 B 4	9503 A 5	T89 A 3	T104 B 5	T113 A 5	



7-1

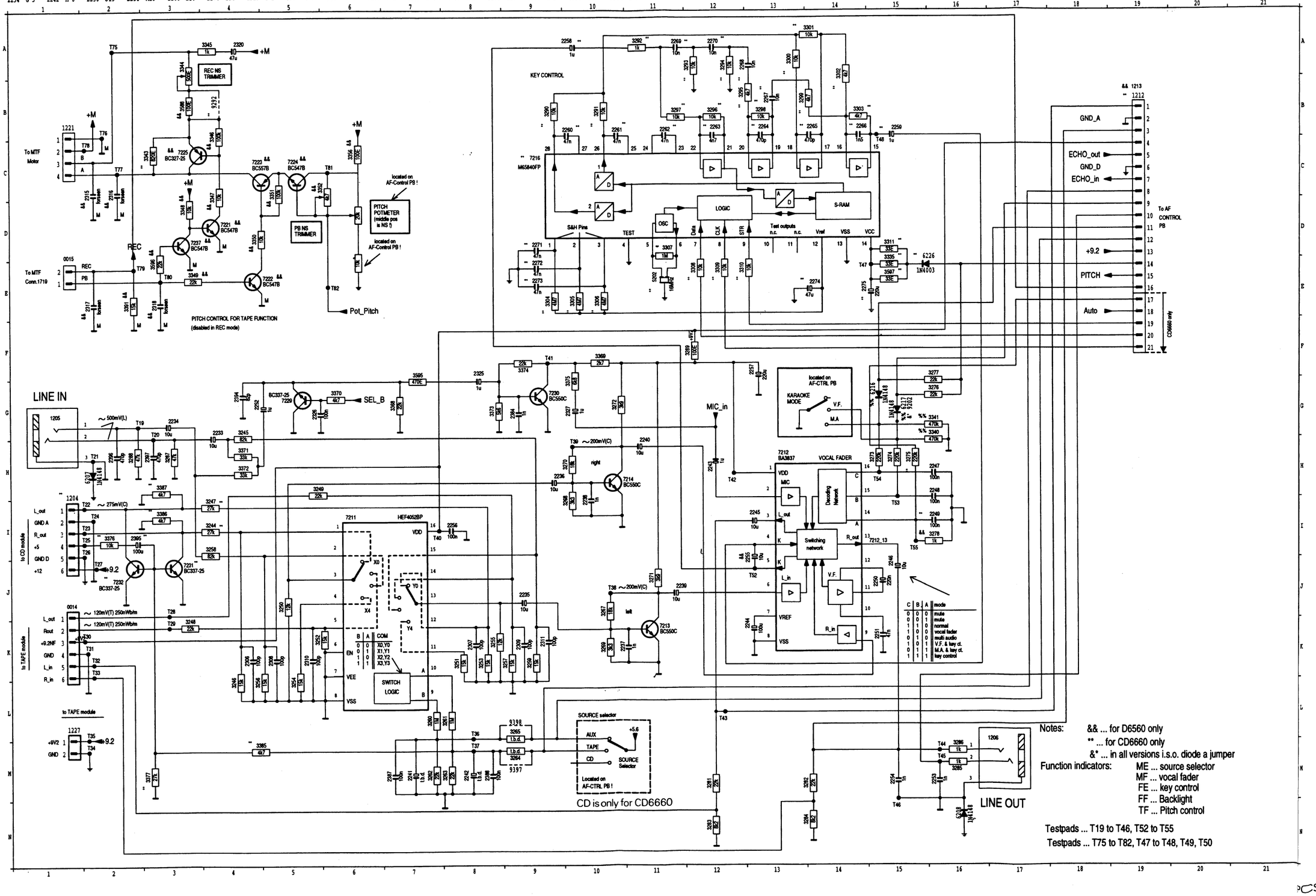
POWER BOARD - CIRCUIT DIAGRAM (1)
KARAOKE FEATURES (MIC, ECHO & GUITAR)

1200 B 1 2205 D 5 2211 H 5 2217 D 9 2223 B12 2229 G12 2314 H 8 3203 B 5 3209 D 4 3215 E 5 3221 A 9 3227 D12 3233 G 9 3239 H13 3336 H 6 5200 B 3 6210 G 2 7202 B 5 7208 H 4 T12 E11 T15 G14 T4 F 2
1201 F 1 2206 F 3 2212 C 8 2218 D11 2224 A12 2230 H12 3204 B 5 3210 F 2 3216 F 7 3222 B 9 3228 C12 3234 G 9 3240 G13 3337 D 6 5201 F 3 6211 H14 7203 D 4 7209 G10 T121 F10 T16 H14 T5 A 5
1202 G15 2207 F 4 2213 B 8 2219 D11 2225 E11 2231 H13 3211 B 6 3217 E 7 3223 B 9 3229 C12 3235 G 9 3241 H13 3338 G 7 5203 A13 6213 D 6 7204 D 4 7210 H12 T122 G11 T17 G13 T6 B 5
2201 B 4 2208 F 5 2214 B 9 2220 C11 2226 G 8 2232 A 4 3200 C 2 3206 B 7 3212 F 4 3218 G 4 3224 D10 3230 B11 3235 I11 3242 H14 3339 H 8 6200 H 6 6214 E 6 7205 F 6 T1 B 2 T123 D10 T18 A 4 T7 B 5
2203 B 5 2209 F 5 2215 C 9 2221 D12 2227 F10 2303 E 9 3201 B 4 3207 C 7 3213 F 4 3219 H 5 3225 E 8 3231 A11 3237 H11 3243 A 4 3587 D10 6201 H 6 7200 A10 7206 F 5 T10 D11 T13 E 8 T2 C 3 T8 H 5
2204 A 6 2210 E 6 2216 C 9 2222 B12 2228 G 9 2304 E11 3202 C 4 3208 D 5 3214 E 5 3220 A 8 3226 E 8 3232 F10 3238 G12 3334 A12 3593 A12 6209 C 2 7201 B 6 7207 H 4 T11 A11 T14 F 9 T3 G 3 T9 D 7



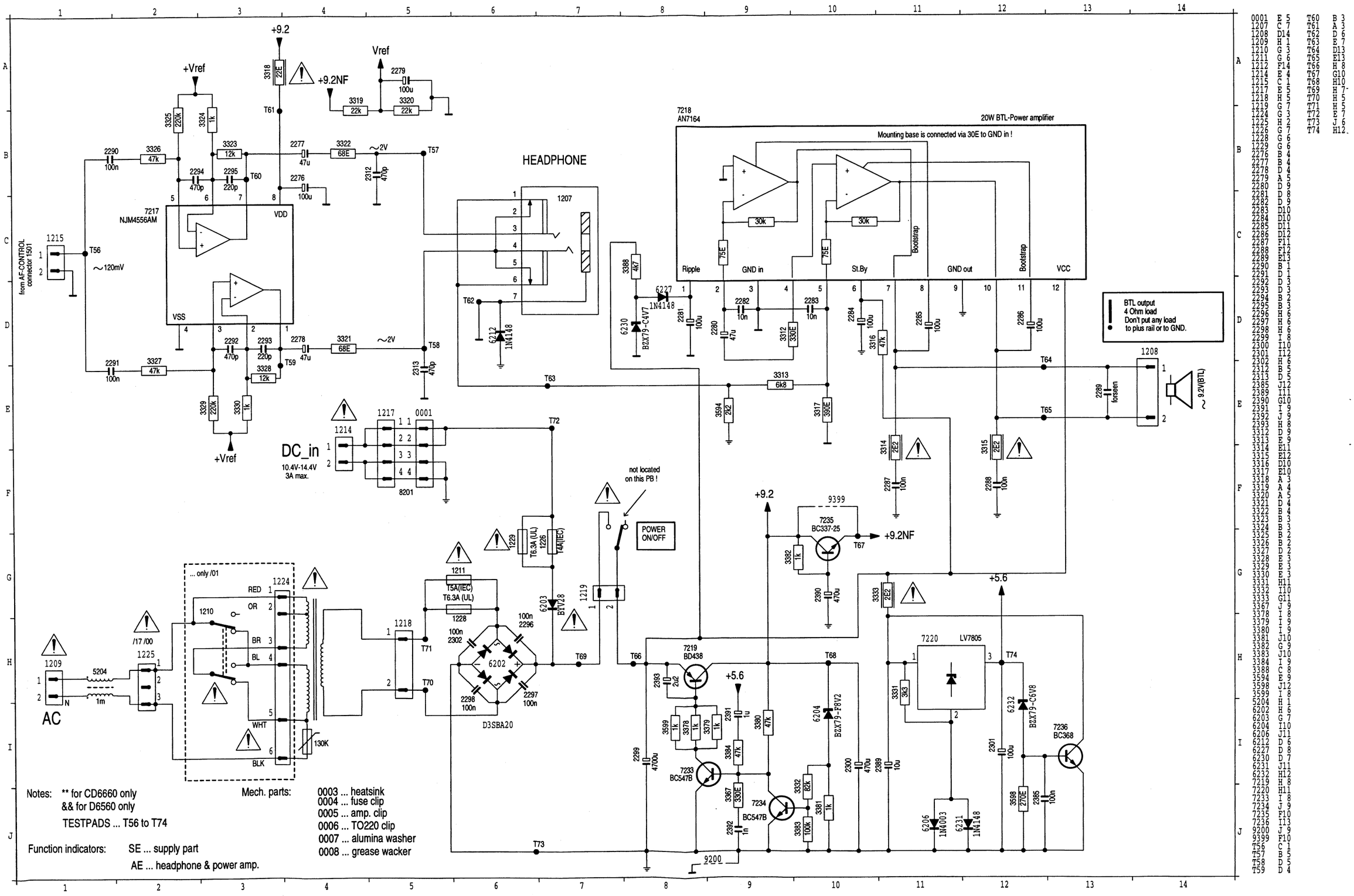
7-2

POWER BOARD - CIRCUIT DIAGRAM (2)
KARAOKE FEATURES (KEY & PITCH CONTROL), SOURCE SELECTOR, LINE IN & OUT



7-3

POWER BOARD - CIRCUIT DIAGRAM (3)
HEADPHONE, DC & AC SOCKET



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1207	C 7	T61	A 3	2277	B 3	3323	B 3
1208	D14	T62	D 6	2278	D 3	3324	B 3
1209	H 1	T63	E 7	2279	A 5	3325	B 2
1210	G 3	T64	D13	2280	D 8	3326	B 2
1211	G 6	T65	E13	2281	D 8	3327	D 2
1212	F14	T66	H 8	2282	D 9	3328	E 3
1214	E 4	T67	G10	2283	D10	3329	E 3
1215	C 1	T68	H10	2284	D10	3330	E 3
1217	E 5	T69	H 7	2285	D11	3331	H11
1218	H 5	T70	H 5	2286	D12	3332	I10
1219	G 7	T71	H 5	2287	F11	3333	G11
1224	G 3	T72	E 7	2288	F12	3367	J 9
1225	H 2	T73	J 6	2289	E13	3378	I 8
1226	G 6	T74	H12	2290	B 1	3379	I 9
1228	G 6			2291	D 1	3380	I 9
1229	G 6			2292	D 3	3381	J10
2276	B 4			2293	D 3	3382	G 9
2277	B 4			2294	B 2	3383	J10
2278	B 5			2295	B 3	3384	I 9
2279	A 5			2296	H 6	3388	C 8
2280	D 8			2297	H 6	3594	E 9
2281	D 8			2298	H 6	3598	J12
2282	D 9			2299	I 8	3599	I 8
2283	D10			2300	I10	5204	H 1
2284	D10			2301	I12	6202	H 6
2285	D11			2302	H 6	6203	G 7
2286	D12			2312	E 5	6204	I10
2287	F11			2313	E 5	6206	J11
2288	F12			2389	J 9	6212	D 5
2289	E13			2390	J 9	6227	D 8
2290	B 1			2391	I 9	6230	D 7
2291	D 1			2392	J 9	6231	J11
2292	D 3			2393	H 8	6232	H12
2293	D 3			3312	D 9	7219	H 8
2294	B 2			3313	E 9	7220	H11
2295	B 3			3314	B11	7233	I 8
2296	H 6			3315	B12	7234	J 9
2297	H 6			3316	D10	7235	F10
2298	H 6			3317	D10	7236	I13
2299	I 8			3318	A 3	9200	J 9
2300	I10			3319	A 4	9399	F10
2301	I12			3320	A 5	T56	C 1
2302	H 6			3321	D 4	T57	B 5
2312	E 5			3322	B 4	T58	D 5
2313	E 5			3323	B 3	T59	D 4
2389	J 9			3324	B 3		
2390	J 9			3325	B 2		
2391	I 9			3326	B 2		
2392	J 9			3327	D 2		
2393	H 8			3328	E 3		
3312	D 9			3329	E 3		
3313	E 9			3330	E 3		
3314	B11			3331	H11		
3315	B12			3332	I10		
3316	D10			3333	G11		
3317	D10			3367	J 9		
3318	A 3			3378	I 8		
3319	A 4			3379	I 9		
3320	A 5			3380	I 9		
3321	D 4			3381	J10		
3322	B 4			3382	G 9		
3323	B 3			3383	J10		
3324	B 3			3384	I 9		
3325	B 2			3388	C 8		
3326	B 2			3594	E 9		
3327	D 2			3598	J12		
3328	E 3			3599	I 8		
3329	E 3			5204	H 1		
3330	E 3			6202	H 6		
3331	H11			6203	G 7		
3332	I10			6204	I10		
3333	G11			6206	J11		
3367	J 9			6212	D 5		
3378	I 8			6227	D 8		
3379	I 9			6230	D 7		
3380	I 9			6231	J11		
3381	J10			6232	H12		
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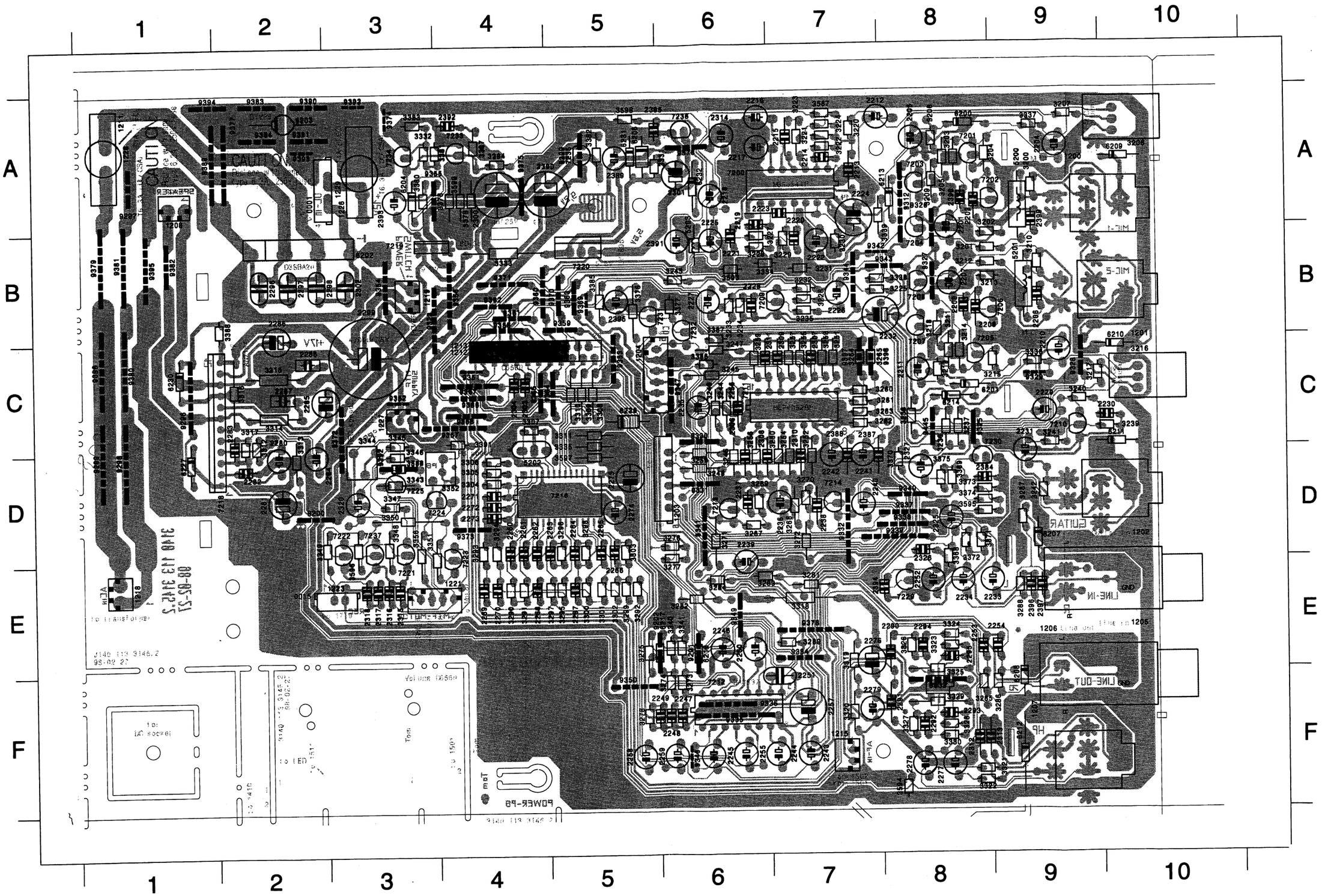
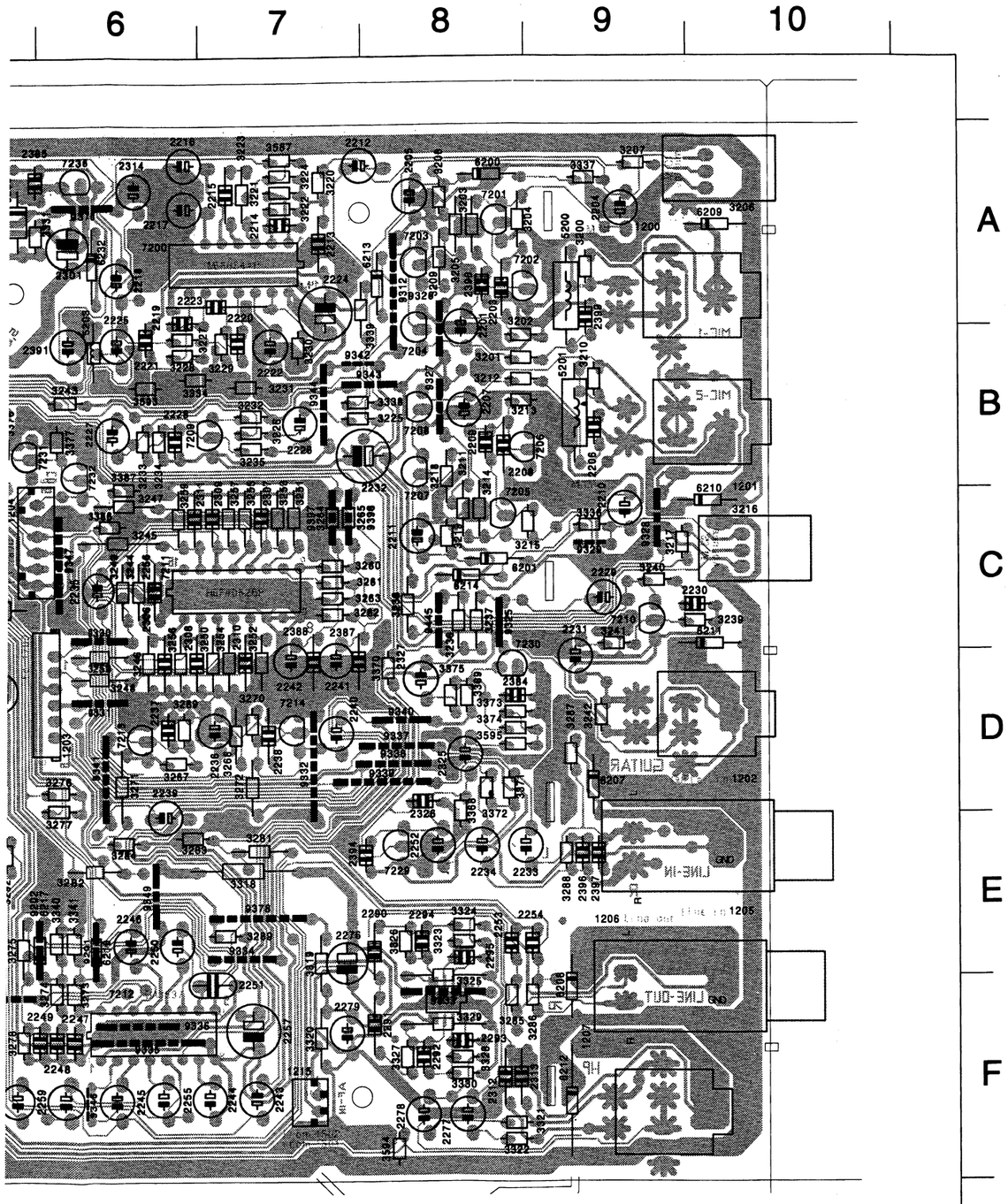
3388	C 8			7234	J 9		
3594	E 9			7235	F10		
3598	J12			7236	I13		
3599	I 8			9200	J 9		
5204	H 1			9399	F10		
6202	H 6			T56	C 1		
6203	G 7			T57	B 5		
6204	I10			T58	D 5		
6206	J11			T59	D 4		
6212	D 5						
6227	D 8						
6230	D 7						
6231	J11						
6232	H12						
7219	H 8						
7220	H11						
7233	I 8						
7234	J 9						
7235	F10						
7236	I13						
9200	J 9						
9399	F10						
T56	C 1						
T57	B 5						
T58	D 5						
T59	D 4						

7-4

POWER BOARD - LAYOUT DIAGRAM

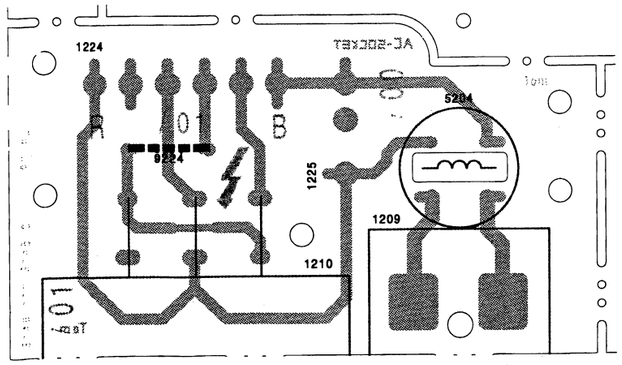




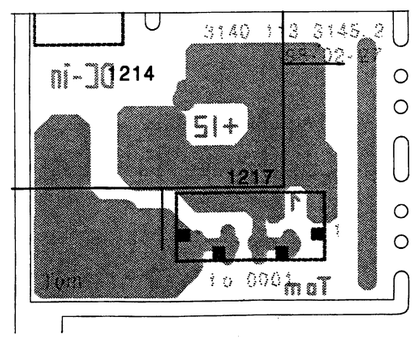
7-4

0001	A 3	2220	B 7	2265	D 5	2312	F 8	3219	C 8	3264	C 7	3312	C 2	3371	D 8	6213	A 8	7236	A 6	9357	C 4	T3 B	9	T48	F 6				
1200	A 9	2221	B 6	2266	D 5	2313	F 8	3220	A 7	3265	C 7	3313	D 2	3372	D 8	6214	C 8	7237	D 3	9358	B 4	T4 B	9	T52	F 6				
1201	B 10	2222	B 7	2267	E 5	2314	A 6	3221	A 7	3267	D 6	3314	C 2	3373	D 8	6216	E 6	8203	G 2	9359	B 5	T5 A	9	T53	F 6				
1202	D 10	2223	A 7	2268	E 4	2315	E 3	3222	A 7	3268	D 7	3315	C 2	3374	D 8	6217	E 5	8204	G 2	9360	B 4	T6 C	9	T54	F 6				
1203	D 6	2224	A 7	2269	E 4	2316	E 3	3223	A 7	3269	D 6	3316	C 2	3375	D 8	6222	F 2	9200	D 2	9361	B 4	T7 A	8	T55	E 5				
1204	C 5	2225	B 6	2270	E 4	2317	E 3	3224	A 7	3270	D 7	3317	C 2	3376	B 5	6223	F 2	9201	E 6	9362	B 4	T8 C	8	T56	F 7				
1205	E 9	2226	B 7	2271	D 4	2318	E 3	3225	B 7	3271	D 6	3318	E 7	3377	B 6	6224	F 2	9202	E 5	9363	B 5	T9 B	7	T57	F 9				
1206	F 9	2227	B 6	2272	D 4	2320	D 3	3226	B 7	3272	D 7	3319	E 7	3378	A 4	6225	F 2	9292	D 3	9364	C 5	T10	A 6	T58	F 9				
1207	F 9	2228	B 6	2273	D 4	2325	D 8	3227	B 6	3273	F 6	3320	F 7	3379	A 4	6226	C 5	9296	C 1	9365	C 4	T11	A 7	T59	F 8				
1208	A 1	2229	C 9	2274	D 5	2326	D 8	3228	B 6	3274	F 6	3321	F 8	3380	A 3	6227	D 1	9297	A 1	9366	C 4	T12	B 6	T60	F 8				
1211	A 1	2230	C 10	2275	D 5	2327	D 8	3229	B 7	3275	E 5	3322	G 8	3381	A 4	6230	C 1	9298	D 1	9367	C 4	T13	B 6	T61	E 7				
1212	C 4	2231	D 9	2276	E 7	2384	D 8	3230	B 7	3276	D 6	3323	E 8	3382	A 5	6231	A 5	9299	D 1	9368	C 4	T14	B 6	T62	F 10				
1213	C 4	2232	B 8	2277	F 8	2385	A 5	3231	B 7	3277	D 6	3324	E 8	3383	A 3	6232	A 6	9312	A 8	9369	B 5	T15	D 9	T63	D 2				
1214	G 1	2233	E 9	2278	F 8	2387	D 7	3232	B 7	3278	F 5	3325	F 8	3384	A 4	7200	A 7	9315	F 3	9370	B 5	T16	D 9	T64	A 1				
1215	F 7	2234	E 8	2279	F 7	2388	D 7	3233	B 6	3281	E 7	3326	E 8	3385	B 5	7201	A 8	9323	B 3	9371	B 4	T17	C 9	T65	A 1				
1217	G 4	2235	C 6	2280	D 2	2389	A 5	3234	B 6	3282	E 6	3327	F 8	3386	C 6	7202	A 8	9325	C 8	9372	C 3	T18	B 8	T66	B 3				
1218	E 1	2236	D 7	2281	D 2	2390	A 5	3235	B 7	3283	E 6	3328	F 8	3387	C 6	7203	A 8	9326	B 8	9373	D 4	T19	E 9	T67	A 5				
1219	B 3	2237	D 6	2282	D 2	2391	B 6	3236	C 8	3284	E 6	3329	F 8	3388	B 2	7204	B 8	9327	B 8	9374	A 3	T20	E 9	T68	A 5				
1221	E 3	2238	D 7	2283	C 2	2392	A 4	3237	C 8	3285	F 8	3330	F 8	3391	C 4	7205	C 8	9328	C 9	9375	A 4	T21	E 9	T69	B 3				
1223	E 3	2239	E 6	2284	D 2	2393	A 3	3238	C 8	3286	F 9	3331	A 5	3516	F 3	7206	B 9	9329	C 9	9376	A 6	T22	C 6	T70	B 1				
1226	A 3	2240	D 7	2285	C 3	2394	E 8	3239	C 10	3287	D 9	3332	A 3	3587	A 7	7207	B 8	9330	C 6	9377	A 2	T23	C 6	T71	A 1				
1227	C 3	2241	D 7	2286	B 2	2395	B 5	3240	C 9	3288	E 9	3333	B 4	3588	D 3	7208	B 8	9331	D 6	9378	E 7	T24	C 6	T72	A 3				
1228	A 1	2242	D 7	2287	C 2	2396	E 9	3241	C 9	3289	E 7	3334	B 6	3593	B 6	7209	B 7	9332	D 7	9379	B 1	T25	C 6	T73	A 3				
1229	A 3	2243	F 7	2288	C 2	2397	E 9	3242	D 9	3290	E 4	3335	C 5	3594	G 8	7210	C 9	9333	F 8	9380	C 1	T26	C 5	T74	B 5				
1502	G 4	2244	F 7	2290	E 8	2398	A 8	3243	B 6	3291	E 4	3336	C 9	3595	D 8	7211	C 7	9334	E 7	9381	B 1	T27	C 6	T75	D 3				
1512	G 3	2245	F 6	2291	F 8	2399	A 9	3244	C 6	3292	E 5	3337	A 9	3596	D 3	7212	F 6	9335	F 6	9382	B 1	T28	C 6	T76	E 3				
1513	G 2	2246	E 6	2292	F 8	3200	A 9	3245	C 6	3293	D 4	3338	B 7	3597	D 5	7213	D 6	9336	F 6	9383	A 2	T29	D 6	T77	E 4				
2201	B 8	2247	F 6	2293	F 8	3201	B 8	3246	D 6	3294	D 4	3339	A 8	3598	A 5	7214	D 7	9337	D 8	9384	A 2	T30	E 6	T78	D 3				
2203	A 8	2248	F 6	2294	E 8	3202	B 8	3247	C 6	3295	E 5	3340	E 6	3599	A 4	7216	D 5	9338	D 8	9389	A 1	T31	D 6	T79	E 3				
2204	A 9	2249	F 5	2295	E 8	3203	A 8	3248	D 6	3296	D 5	3341	E 6	5200	A 9	7217	F 8	9339	D 8	9390	A 2	T32	E 7	T80	E 3				
2205	A 8	2250	E 6	2296	B 2	3204	A 8	3249	C 6	3297	E 5	3343	D 3	5201	B 9	7218	C 2	9340	D 8	9391	A 2	T33	E 6	T81	D 3				
2206	B 9	2251	F 7	2297	B 2	3205	A 8	3250	D 7	3298	D 5	3344	D 3	5202	C 4	7219	B 3	9341	D 6	9392	A 3	T34	C 3	T82	D 4				
2207	B 8	2252	E 8	2298	B 2	3206	A 10	3251	C 7	3299	E 5	3345	C 3	5203	B 6	7220	B 5	9342	B 7	9393	A 2	T35	B 4	T95	G 3				
2208	B 8	2253	E 8	2299	C 3	3207	A 9	3252	D 7	3300	E 5	3346	D 3	6200	A 8	7221	D 3	9343	B 8	9394	A 1	T36	C 8	T96	F 3				
2209	B 8	2254	E 9	2300	A 4	3208	A 8	3253	C 7	3301	E 5	3347	D 3	6201	C 8	7222	D 3	9344	B 7	9395	B 1	T37	C 8	T97	G 3				
2210	C 9	2255	F 6	2301	A 6	3209	A 8	3254	D 7	3302	E 5	3348	D 3	6202	B 2	7223	D 4	9346	F 6	9396	C 1	T38	E 6	T98	G 3				
2211	C 8	2256	C 6	2302	B 3	3210	B 9	3255	C 7	3303	D 5	3349	D 3	6203	A 2	7224	D 3	9347	C 6	9397	C 7	T39	D 7	T99	G 4				
2212	A 7	2257	F 7	2303	C 4	3211	C 8	3256	D 6	3304	D 4	3350	D 3	6204	A 3	7225	D 3	9349	E 6	9398	C 7	T40	C 6	T100	G 3				
2213	A 7	2258	F 5	2304	C 4	3212	B 8	3257	C 7	3305	D 4	3351	D 3	6206	A 5	7229	E 8	9350	F 5	9399	A 5	T41	D 8	T121	B 10				
2214	A 7	2259	F 6	2306	D 6	3213	B 8	3258	D 6	3306	D 4	3352	D 4	6207	D 9	7230	D 8	9351	C 4	9445	C 8	T42	F 7	T122	C 8				
2215	A 7	2260	D 4	2307	C 7	3214	C 8	3259	C 6	3307	C 4	3356	D 3	6208	F 9	7231	B 5	9352	C 3	9491	G 4	T43	E 7	T123	A 7				
2216	A 6	2261	D 4	2308	D 6	3215	C 9	3260	C 7	3308	C 5	3367	A 4	6209	A 10	7232	B 6	9353	C 5	9492	G 10	T44	F 9						
2217	A 6	2262	D 4	2309	C 7	3216	C 10	3261	C 7	3309	C 5	3368	E 8	6210	C 10	7233	A 4	9354	B 3	9493	G 2	T45	F 8						
2218	A 6	2263	D 5	2310	D 7	3217	C 9	3262	C 7	3310	C 5	3369	D 8	6211	C 10	7234	A 3	9355	A 4	T1 A	9	T46	E 9						
2219	A 6	2264	D 5	2311	C 6	3218	B 8	3263	C 7	3311	C 5	3370	D 8	6212	F 9	7235	A 5	9356	B 4	T2 A	10	T47	D 5						

AC SOCKET - LAYOUT DIAGRAM



DC SOCKET - LAYOUT DIAGRAM



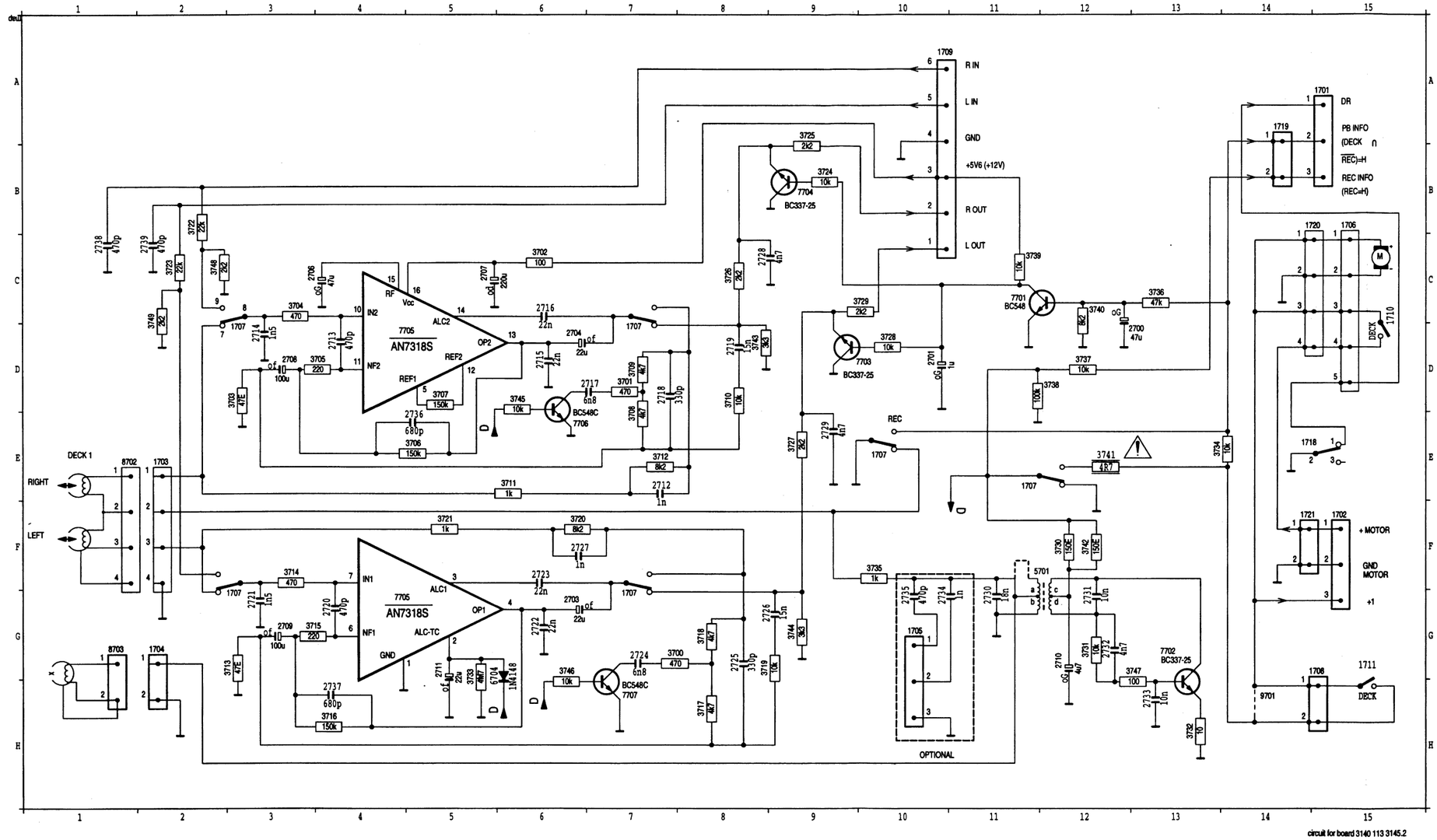
RECORDER BOARD - CIRCUIT DIAGRAM

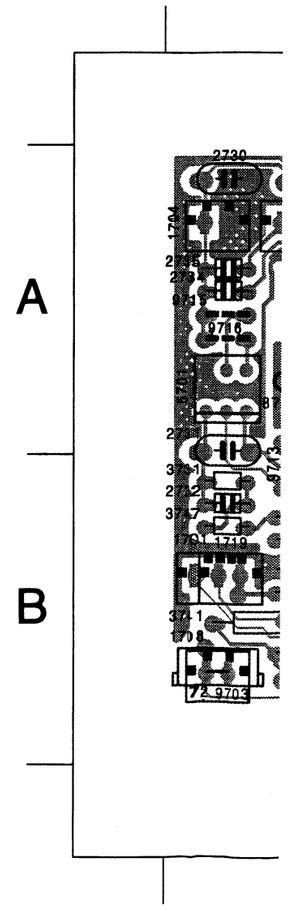
8-1

RECORDER BOARD - |

71	B 3	1721	B 3
72	B 1	2700	B 3
1701	B 1	2701	B 3
1702	B 3	2703	B 2
1703	A 1	2704	B 3
1704	A 1	2706	B 3
1705	A 1	2707	B 2
1706	B 3	2708	A 3
1707	A 2	2709	B 1
1708	B 1	2710	A 1
1709	A 3	2711	B 2
1719	B 1	2712	A 2
1720	B 3	2713	B 2

1701 A15 1707 D 7 1708 G14 1720 B14 2706 C 3 2712 E 7 2718 D 7 2724 G 7 2730 G11 2736 E 5 3702 C 6 3708 E 7 3714 F 3 3720 F 6 3726 C 8 3732 H13 3738 D12 3744 G 9 5701 F11 7705 G 4 9701 H14
1702 F15 1707 G 7 1709 A10 1721 F14 2700 D13 2707 C 5 2713 D 4 2719 D 8 2725 G 8 2731 G12 2737 H 4 3703 C 3 3709 D 7 3715 G 3 3721 F 5 3727 E 9 3733 G 5 3739 C11 3745 D 6 6704 G 6 7701 C11 7705 D 4
1703 E 2 1707 D 3 1710 D15 2700 D13 2708 D 3 2714 D 3 2720 G 4 2726 G 9 2732 G12 2738 C 1 3704 C 3 3710 D 8 3716 H 4 3722 B 2 3728 D10 3734 E13 3740 C12 7701 C11 7706 D 5
1704 G 2 1707 G 3 1711 G15 2701 D10 2709 G 3 2715 D 6 2721 G 3 2727 F 6 2733 H13 2739 C 2 3705 D 4 3711 E 6 3717 H 8 3723 C 2 3729 C10 3735 F10 3741 E12 7702 G13 7707 H 7
1705 G10 1707 E11 1718 E14 2703 G 6 2710 G12 2716 C 6 2722 G 8 2728 C 8 2734 G10 3700 G 7 3706 E 5 3712 E 7 3718 G 8 3724 B 9 3730 C12 3736 C12 3742 F12 3748 C 2 7703 D 9 8702 G 1
1706 B15 1707 E10 1719 A14 2704 D 6 2711 G 5 2717 D 7 2723 F 6 2729 E 9 2735 G10 3701 D 7 3707 D 5 3713 G 3 3719 G 8 3725 A 9 3731 C12 3737 D12 3743 D 8 3749 C 2 7704 B 9 8703 G 1





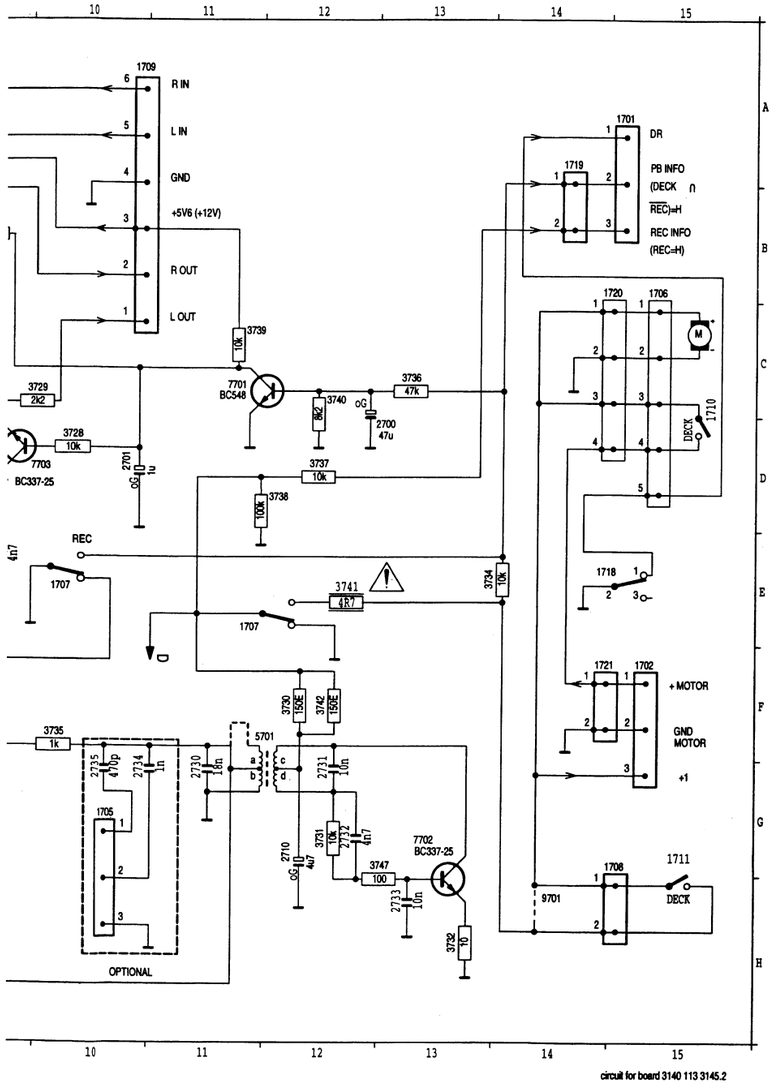
CASSETTE ADJUSTMENT

Adjustment	Cassette	SK	Deck 1	Measure on	Read on	Adjust with	Adjust to
Azimuth	10kHz SBC420*	Tape	Play	H/P Jack	mV meter	Left hand Screw R/P Head	max.
Motor Speed	3150kHz SBC420*	Tape	Play	H/P Jack	Wow and flutter meter	Preset in motor	**a

* SBC420 : 4822 397 30071

**a The maximum permissible speed deviation is ± 3%.
Morever, the wow and flutter value can be read.

F 6	3726	C 8	3732	H13	3738	D12	3744	G 9	5701	F11	7705	G 4	9701	H14	
F 5	3727	E 9	3733	G 5	3739	C11	3745	D 6	6704	G 6	7705	D 4			
B 2	3728	D10	3734	E13	3740	C12	3746	G 6	7701	C11	7706	D 6			
C 2	3729	C10	3735	F10	3741	E12	3747	G13	7702	G13	7707	H 7			
B 9	3730	F12	3736	C13	3742	F12	3748	C 2	7703	D 9	8702	E 1			
A 9	3731	G12	3737	D12	3743	D 8	3749	C 2	7704	B 9	8703	G 1			



circuit for board 3140 113 3145.2

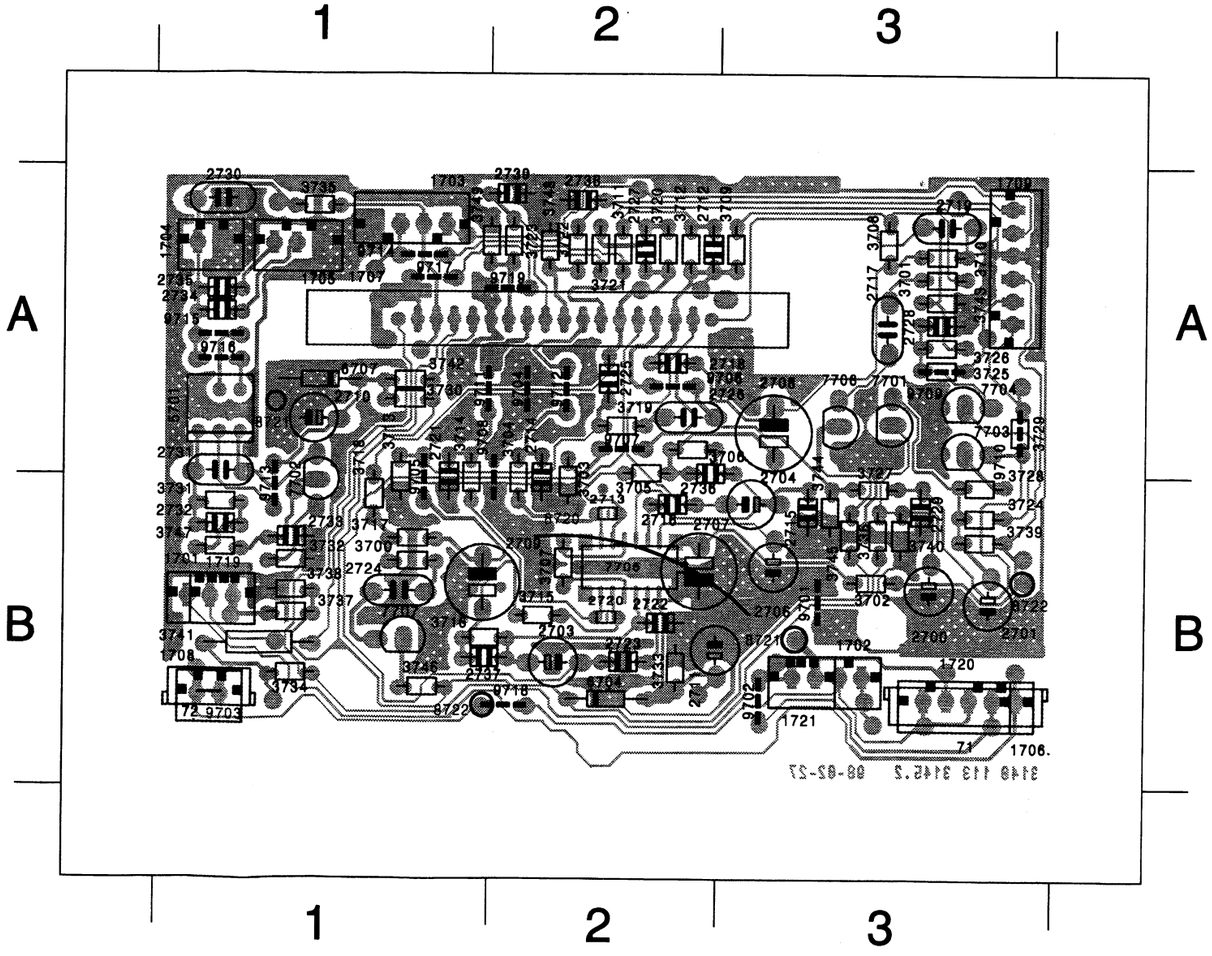
420 : 4822 397 30071

maximum permissible speed deviation is ± 3%.

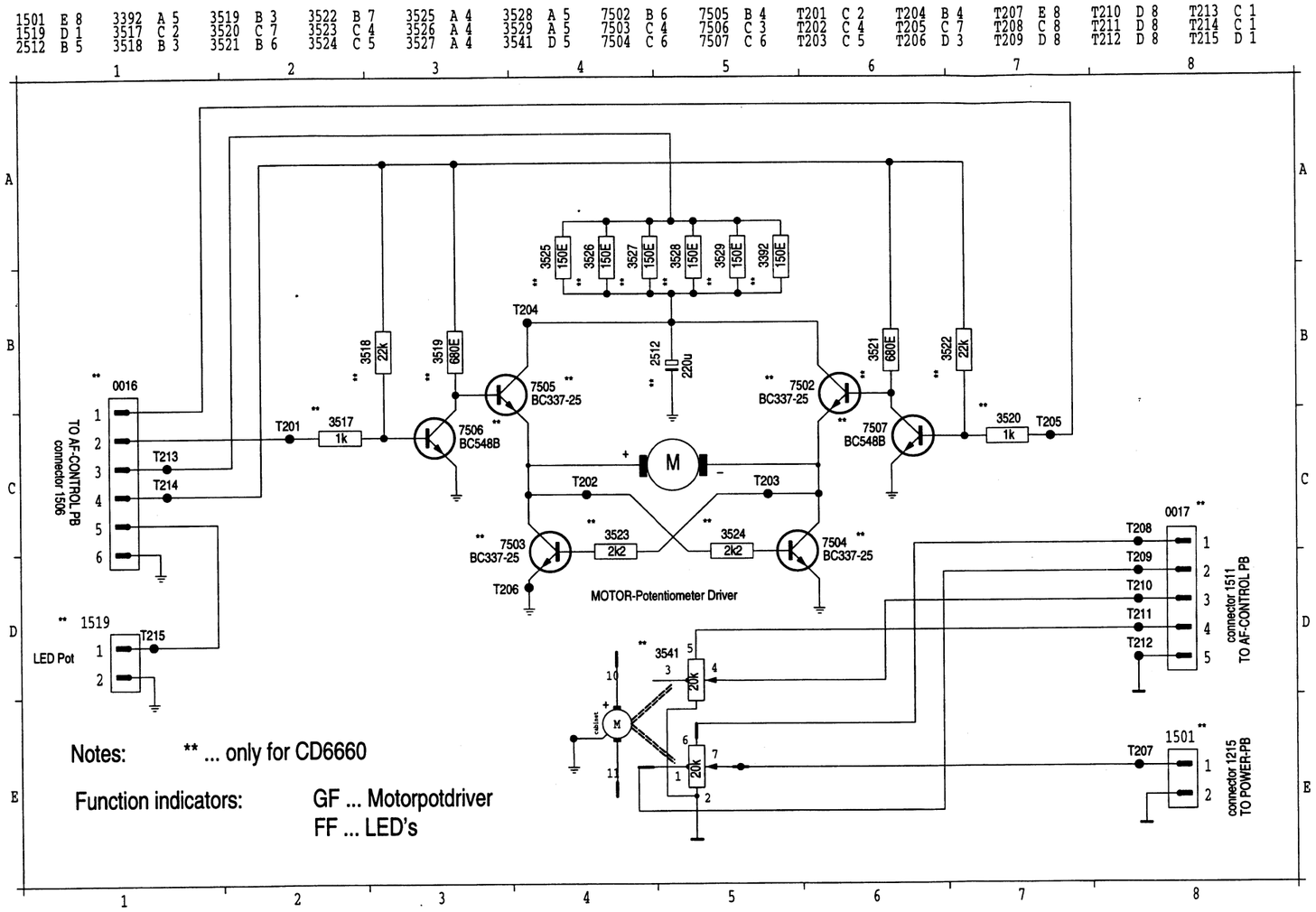
ever, the wow and flutter value can be read.

RECORDER BOARD - LAYOUT DIAGRAM

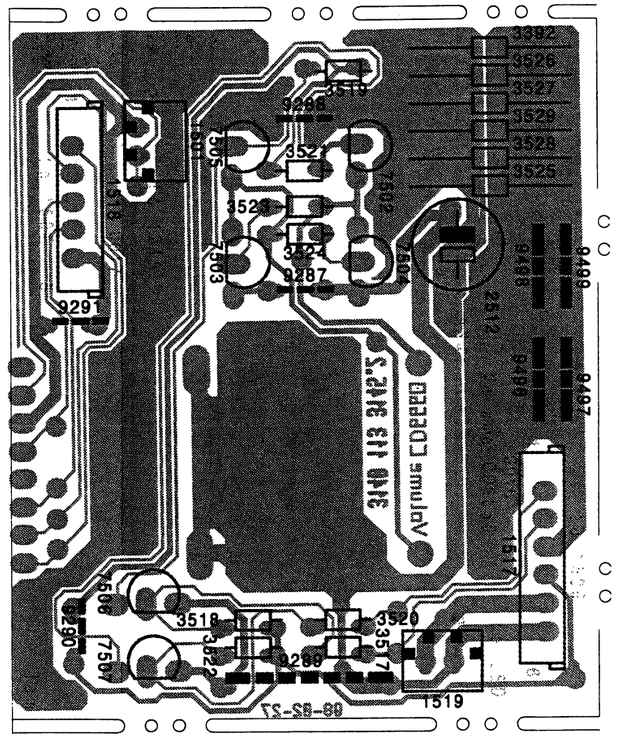
71 B 3	1721 B 3	2714 B 2	2727 A 2	3700 B 1	3713 B 1	3726 A 3	3739 B 3	6707 A 1	9707 A 2
72 B 1	2700 B 3	2715 B 3	2728 A 3	3701 A 3	3714 B 1	3727 B 3	3740 B 3	7701 A 3	9708 B 2
1701 B 1	2701 B 3	2716 B 2	2729 B 3	3702 B 3	3715 B 2	3728 B 3	3741 B 1	7702 B 1	9709 A 3
1702 B 3	2703 B 2	2717 A 3	2730 A 1	3703 B 2	3716 B 1	3729 A 3	3742 A 1	7703 A 3	9710 A 3
1703 A 1	2704 B 3	2718 A 2	2731 A 1	3704 B 2	3717 B 1	3730 A 1	3743 A 3	7704 A 3	9711 A 1
1704 A 1	2706 B 3	2719 A 3	2732 B 1	3705 A 2	3718 B 1	3731 B 1	3744 B 3	7705 B 2	9712 A 2
1705 A 1	2707 B 2	2720 B 2	2733 B 1	3706 A 2	3719 A 2	3732 B 1	3745 B 3	7706 A 3	9713 B 1
1706 B 3	2708 A 3	2721 B 1	2734 A 1	3707 B 2	3720 A 2	3733 B 2	3746 B 1	7707 B 1	9714 A 1
1707 A 2	2709 B 1	2722 B 2	2735 A 1	3708 A 3	3721 A 2	3734 B 1	3747 B 1	9701 B 3	9715 A 1
1708 B 1	2710 A 1	2723 B 2	2736 A 2	3709 A 3	3722 A 2	3735 A 1	3748 A 2	9702 B 3	9716 A 1
1709 A 3	2711 B 2	2724 B 1	2737 B 1	3710 A 3	3723 A 2	3736 B 3	3749 A 2	9704 A 2	9717 A 1
1719 B 1	2712 A 2	2725 A 2	2738 A 2	3711 A 2	3724 B 3	3737 B 1	5701 A 1	9705 B 1	9718 B 2
1720 B 3	2713 B 2	2726 A 2	2739 A 2	3712 A 2	3725 A 3	3738 B 1	6704 B 2	9706 A 2	9719 A 2



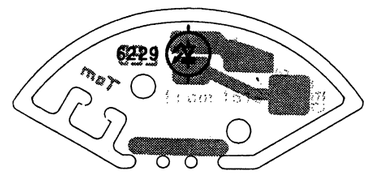
VOLUME BOARD - CIRCUIT DIAGRAM



VOLUME BOARD - LAYOUT DIAGRAM

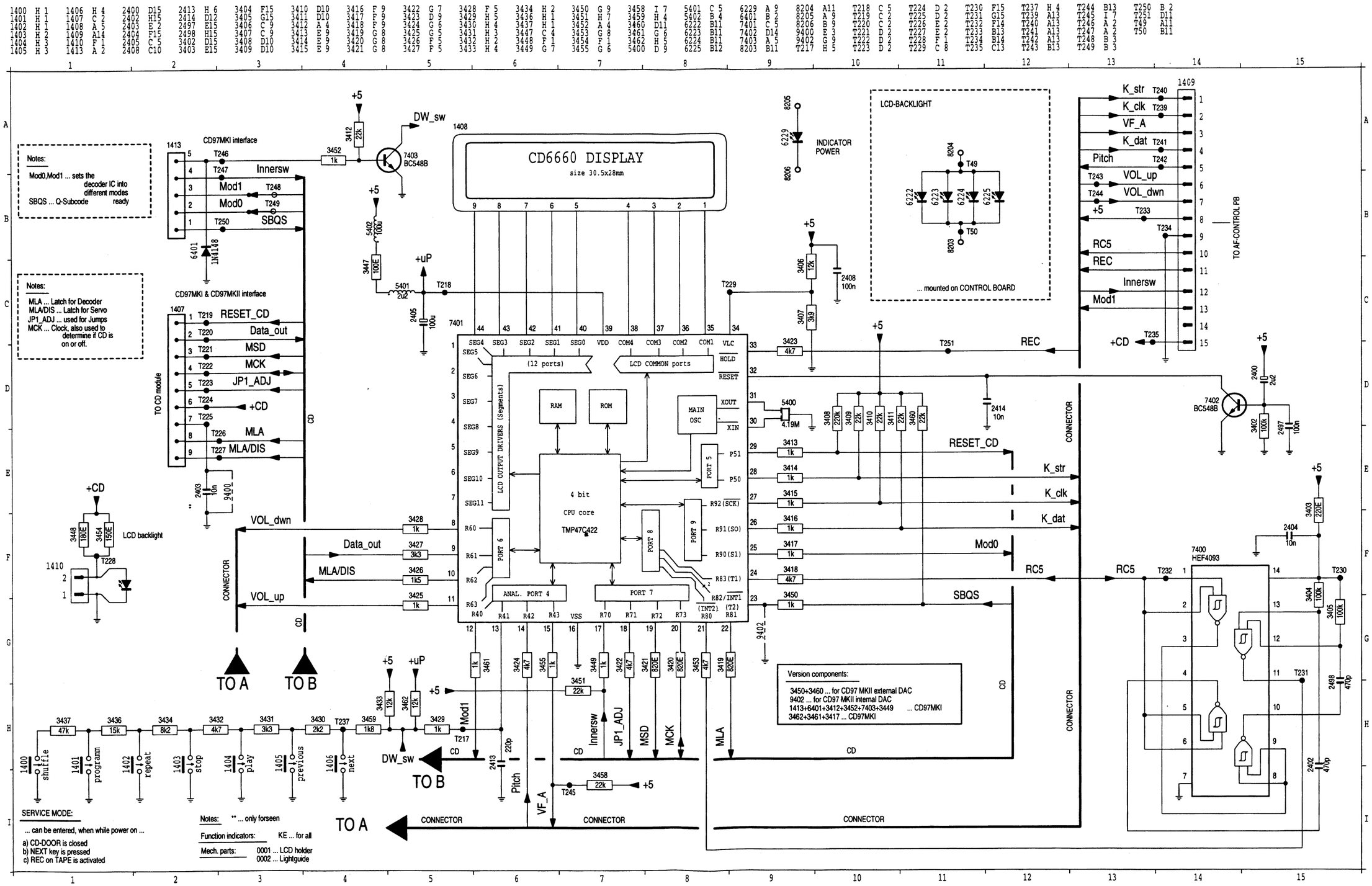


POWER INDICATOR BOARD - LAYOUT DIAGRAM



10-1

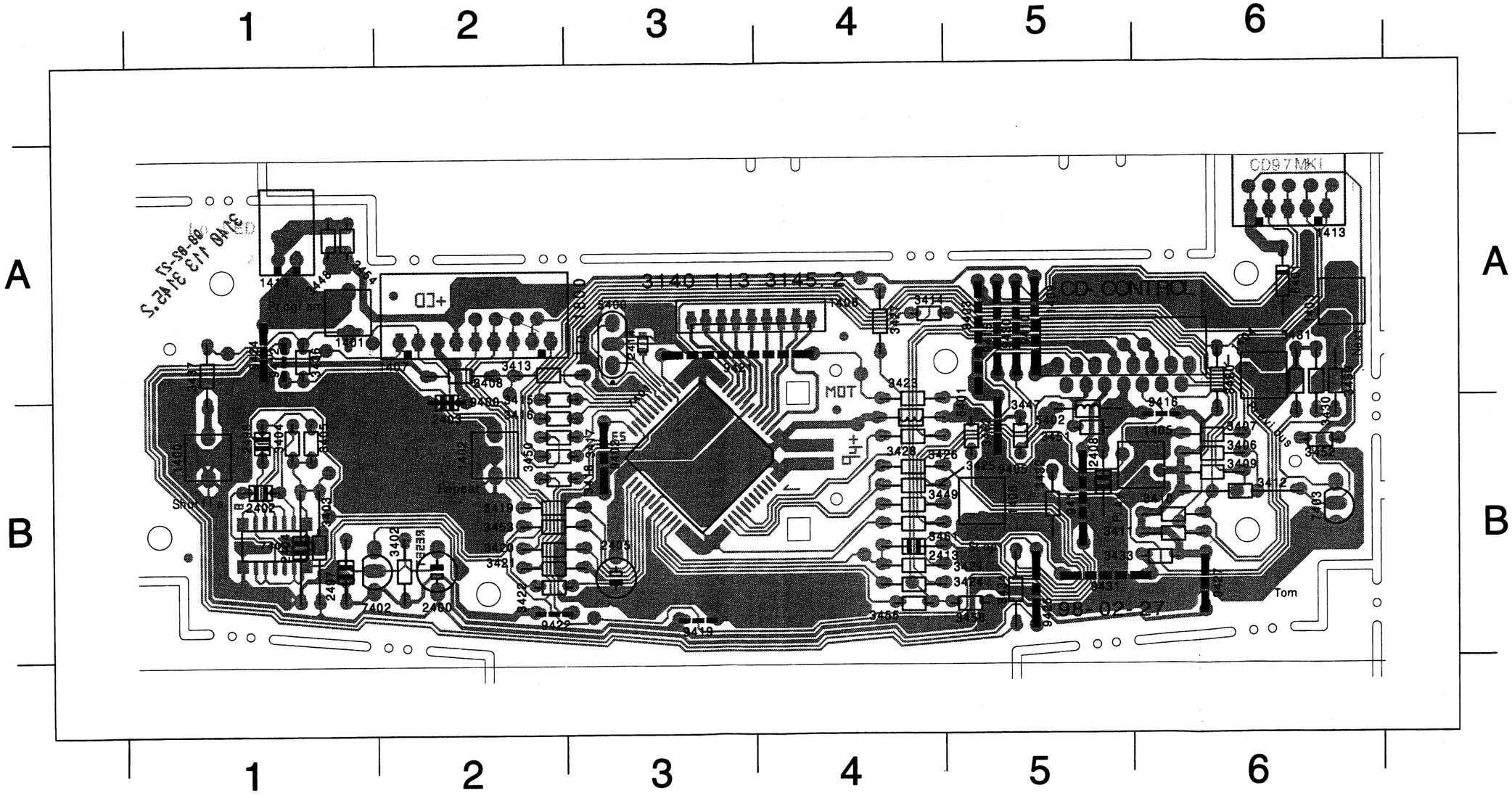
CD CONTROL BOARD - CIRCUIT DIAGRAM



10-2

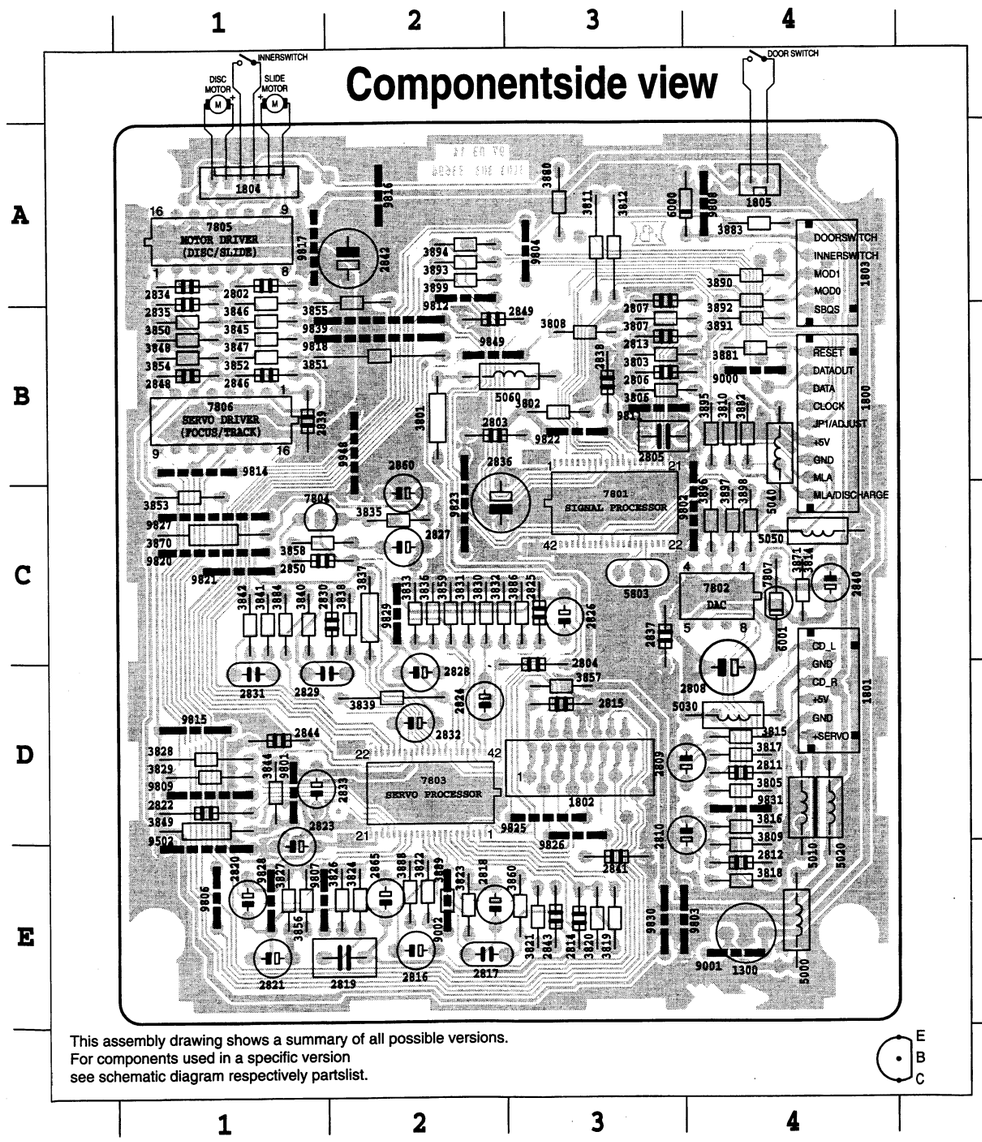
CD CONTROL BOARD - LAYOUT DIAGRAM

1400 B 1	1409 A 5	2413 B 4	3407 B 6	3416 B 2	3425 B 4	3434 B 5	3453 B 2	5401 B 4	9403 A 5	9422 B 2	T220 A 2	T229 B 6	T239 B 6	T248 A 6
1401 A 1	1410 A 1	2414 A 3	3408 A 2	3417 B 2	3426 B 4	3436 A 1	3454 A 1	5402 B 5	9405 B 5	9424 A 1	T221 A 2	T230 B 1	T240 B 6	T249 A 6
1402 B 2	1413 A 6	2497 B 1	3409 B 6	3418 B 2	3427 A 4	3437 A 1	3455 B 4	6401 A 6	9410 A 5	9425 B 5	T222 A 2	T231 B 1	T241 B 6	T250 A 6
1403 A 6	2400 B 2	2498 B 1	3410 B 6	3419 B 2	3428 B 4	3447 B 5	3458 B 5	7400 B 1	9412 A 1	9427 B 6	T223 A 2	T232 B 3	T242 A 6	T251 A 4
1404 A 6	2402 B 1	3402 B 2	3411 B 6	3420 B 2	3429 B 4	3448 A 1	3459 A 6	7401 B 3	9414 B 5	9430 A 5	T224 A 2	T233 B 6	T243 B 5	
1405 B 6	2403 B 2	3403 B 1	3412 B 6	3421 B 2	3430 A 6	3449 B 4	3460 A 6	7402 B 1	9415 A 5	9431 B 5	T225 A 2	T234 A 5	T244 A 5	
1406 B 5	2404 B 1	3404 B 1	3413 A 2	3422 B 2	3431 A 6	3450 B 2	3461 B 4	7403 B 6	9416 B 6	T217 B 4	T226 A 1	T235 A 4	T245 B 4	
1407 A 2	2405 B 3	3405 B 1	3414 A 4	3423 B 4	3432 B 5	3451 B 5	3462 B 5	9400 B 2	9419 B 3	T218 B 4	T227 A 1	T236 A 6	T246 A 6	
1408 A 3	2408 B 5	3406 B 6	3415 B 2	3424 B 4	3433 B 6	3452 B 6	5400 A 3	9402 B 3	9421 A 3	T219 A 2	T228 A 1	T237 A 1	T247 A 6	



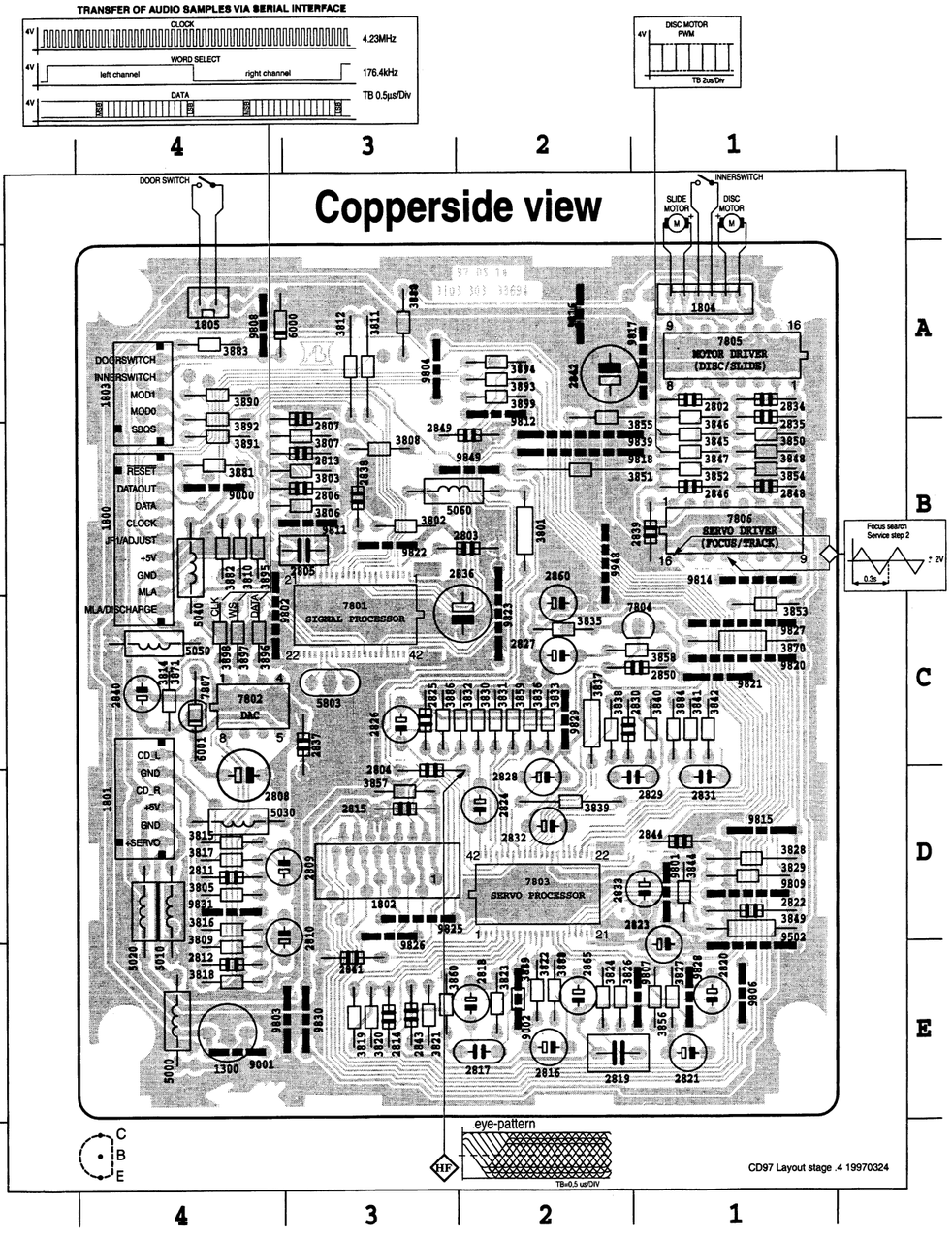
LAMP'S BOARD - LAYOUT DIAGRAM

CD 97 (MK I) - LAYOUT DIAGRAM



This assembly drawing shows a summary of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

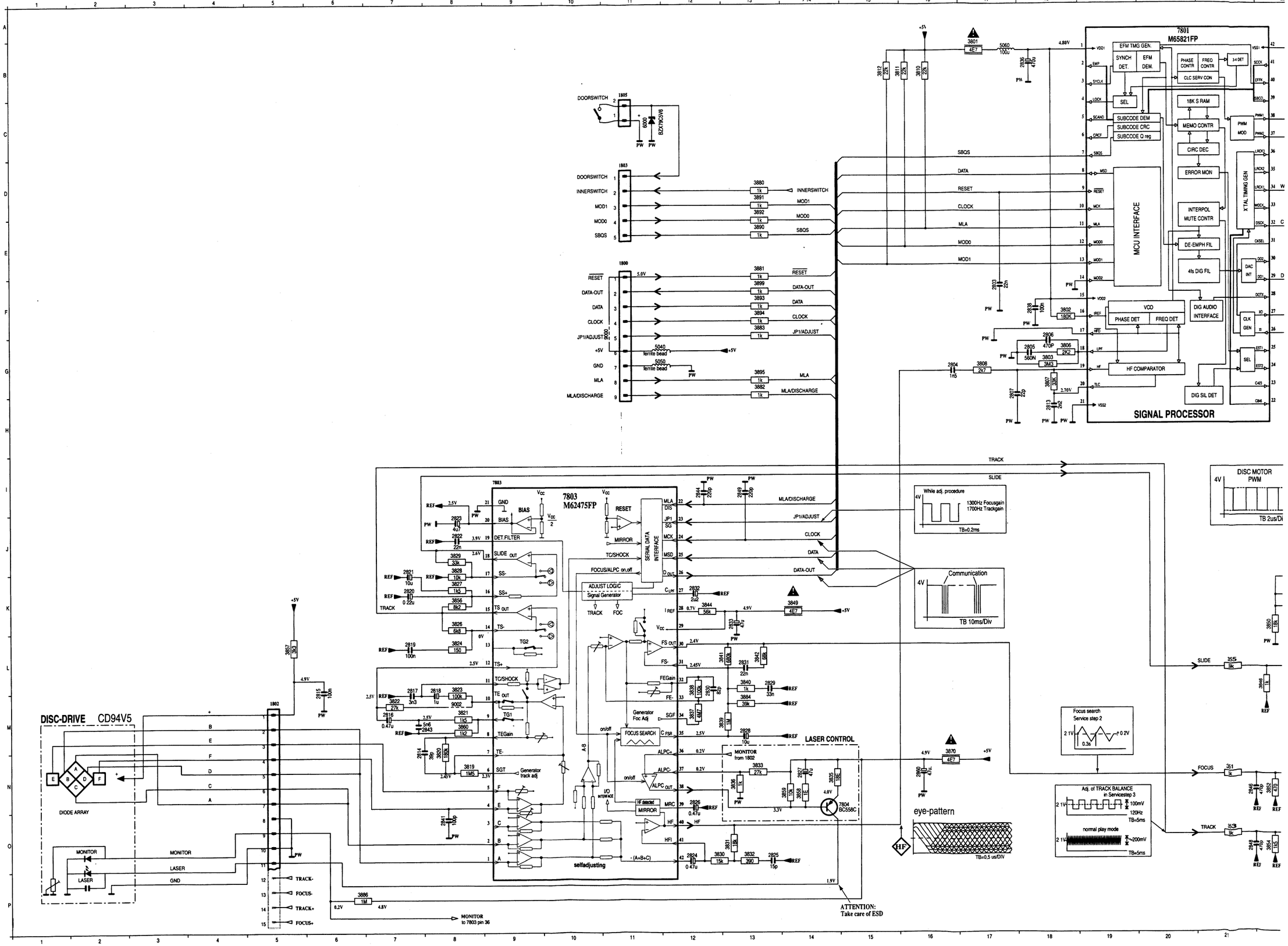
1300 E 4	3807 B 3	3891 B 4	
1800 B 4	3808 B 3	3892 A 4	
1801 D 4	3809 E 4	3893 A 2	
1802 D 3	3810 B 4	3894 A 2	
1803 A 4	3811 A 3	3895 B 4	
1804 A 1	3812 A 3	3896 C 4	
1805 A 4	3814 C 4	3897 C 4	
2802 A 1	3815 D 4	3898 C 4	
2803 B 2	3816 D 4	3899 A 2	
2804 D 3	3817 D 4	5000 E 4	
2805 B 3	3818 E 4	5010 D 4	
2806 B 3	3819 E 3	5020 D 4	
2807 A 3	3820 E 3	5030 D 4	
2808 D 4	3821 E 3	5040 B 4	
2809 D 4	3822 E 2	5050 C 4	
2810 D 4	3823 E 2	5060 B 3	
2811 D 4	3824 E 2	5803 C 3	
2812 E 4	3826 E 2	6000 A 4	
2813 B 3	3827 E 1	6001 C 4	
2814 E 3	3828 D 1	7802 C 4	
2815 D 3	3829 D 1	7804 C 1	
2816 E 2	3830 C 2	7805 A 1	
2817 E 2	3831 C 2	7806 B 1	
2818 E 2	3832 C 2	7807 C 4	
2819 E 2	3833 C 2	9000 B 4	
2820 E 1	3835 C 2	9001 E 4	
2821 E 1	3836 C 2	9002 E 2	
2822 D 1	3837 C 2	9502 E 1	
2823 E 1	3838 C 2	9801 D 1	
2824 D 2	3839 D 2	9802 C 4	
2825 C 3	3840 C 1	9803 E 3	
2826 C 3	3841 C 1	9804 A 3	
2827 C 2	3842 C 1	9806 E 1	
2828 D 2	3844 D 1	9807 E 1	
2829 D 1	3845 B 1	9808 A 4	
2830 C 2	3846 A 1	9809 D 1	
2831 D 1	3847 B 1	9811 B 3	
2832 D 2	3848 B 1	9812 A 2	
2833 D 1	3849 D 1	9814 B 1	
2834 A 1	3850 B 1	9815 D 1	
2835 A 1	3851 B 2	9816 A 2	
2836 C 2	3852 B 1	9817 A 1	
2837 C 3	3853 C 1	9818 B 2	
2838 B 3	3854 B 1	9820 C 1	
2839 B 1	3855 A 2	9821 C 1	
2840 C 4	3856 E 1	9822 B 3	
2841 E 3	3857 D 3	9823 C 2	
2842 A 2	3858 C 1	9825 D 3	
2843 E 3	3859 C 2	9826 D 3	
2844 D 1	3860 E 3	9827 C 1	
2846 B 1	3870 C 1	9828 E 1	
2848 B 1	3871 C 4	9829 C 2	
2849 B 2	3880 A 3	9830 E 3	
2850 C 1	3881 B 4	9831 D 4	
2860 C 2	3882 B 4	9839 B 2	
2865 E 2	3883 A 4	9849 B 2	
3801 B 2	3884 C 1	9948 B 2	
3802 B 3	3886 C 3	7801 C 3	
3803 B 3	3888 E 2	7803 D 2	
3805 D 4	3889 E 2		
3806 B 3	3890 A 4		



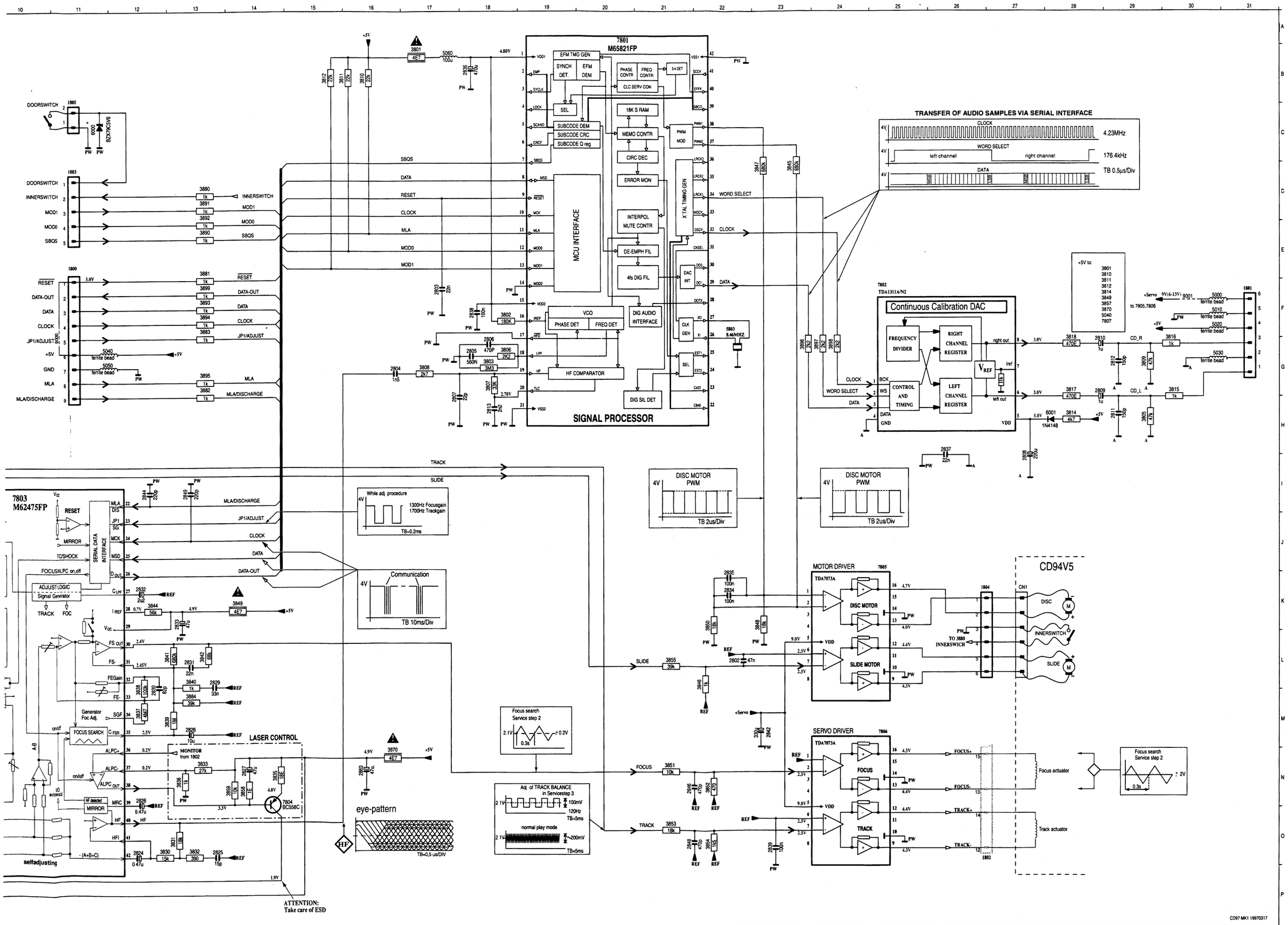
CD97 Layout stage .4 19970324

11-2

CD97(MK I) - CIRCUIT DIAGRAM

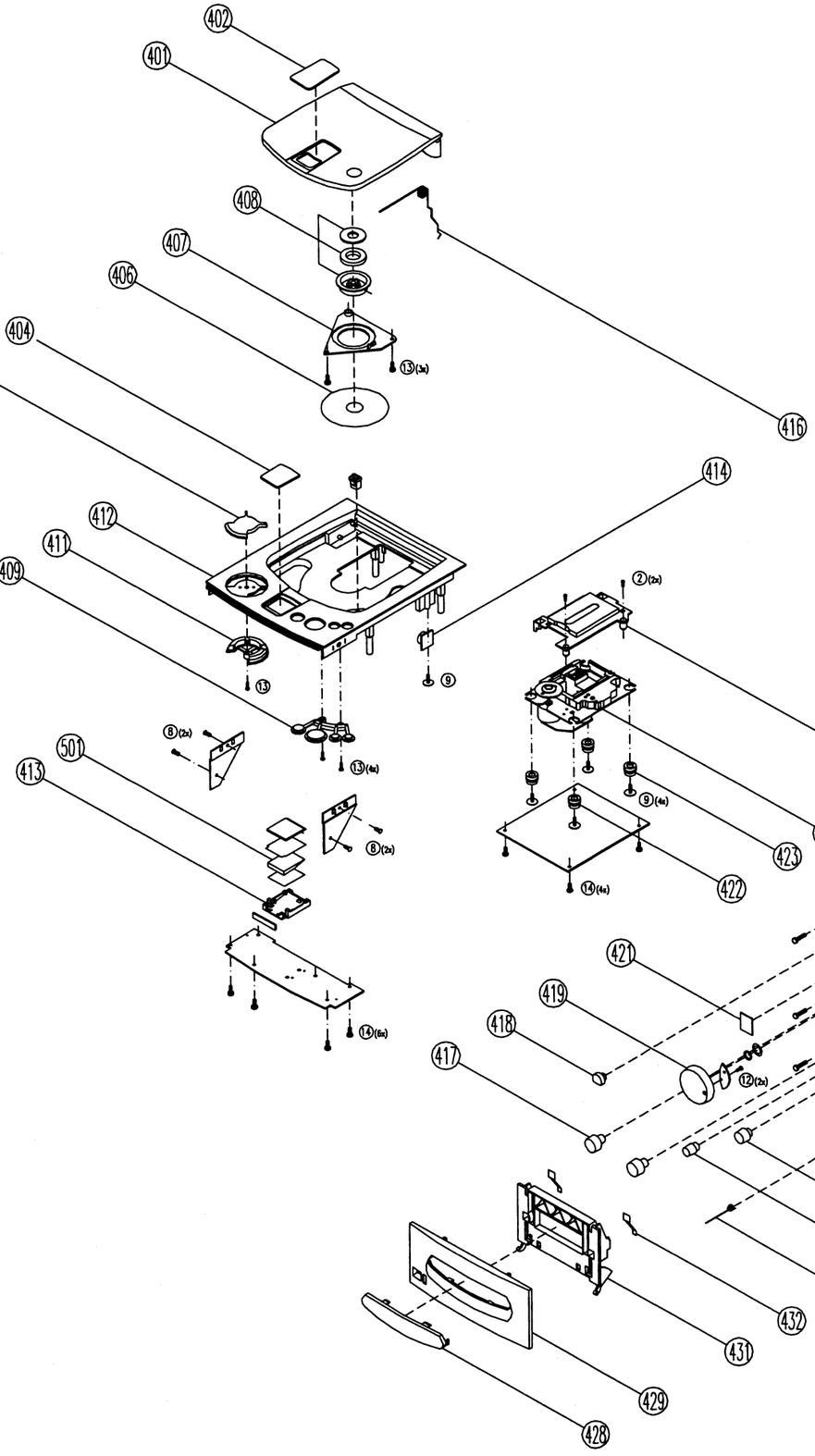


11-2



1300 E29
1800 E11
1801 F31
1802 Q 5
1803 D11
1804 K26
1805 D 8
2802 L22
2803 F17
2804 G16
2805 G18
2806 G18
2807 G17
2808 H27
2809 G28
2810 G28
2811 H29
2812 G29
2813 H18
2814 M 7
2815 L 6
2816 M 7
2817 L 7
2818 L 8
2819 L 7
2820 K 7
2821 J 7
2822 J 8
2823 J 8
2824 O12
2825 O13
2826 N12
2827 N14
2828 M13
2829 L13
2830 L12
2831 L13
2832 K12
2833 K13
2834 K22
2835 K22
2836 B18
2837 H26
2838 F18
2839 O23
2841 O 8
2842 M23
2843 M 7
2844 I12
2846 N21
2848 O21
2849 I13
2850 O14
2860 N16
2865 M 7
3801 B17
3802 F18
3803 G18
3805 H29
3806 G18
3807 G18
3808 G17
3809 G29
3810 B16
3811 B16
3812 B15
3815 G30
3816 G30
3817 G28
3818 G28
3819 N 8
3820 M 8
3821 M 8
3822 L 7
3823 L 8
3824 L 8
3826 K 8
3827 K 8
3828 J 8
3829 J 8
3830 O12
3831 O13
3832 O13
3833 N13
3835 N14
3836 N13
3837 M12
3838 L12
3839 M13
3840 L13
3841 L13
3842 L13
3844 K12
3845 D23
3846 L22
3847 D23
3848 K23
3849 K14
3850 M22
3851 N21
3852 N22
3853 O21
3854 O22
3855 L21
3856 K 8
3857 L 5
3858 N14
3859 N14
3860 M 8
3870 N16
3871 H28
3880 D13
3881 E13
3882 G13
3883 F13
3884 M13
3886 P 6
3888 M 8
3889 L 8
3890 E13
3891 D13
3892 D13
3893 F13
3894 F13
3895 G13
3896 G23
3897 G24
3898 G24
3899 F13
5000 F30
5010 F30
5020 F30
5030 G30
5040 G11
5050 G11
5060 A18
5803 F22
6000 E11
6001 H28
7801 A19
7802 F25
7803 I 9
7804 N14
7805 J25
7806 M25
9000 F10
9001 F29
9002 M 8

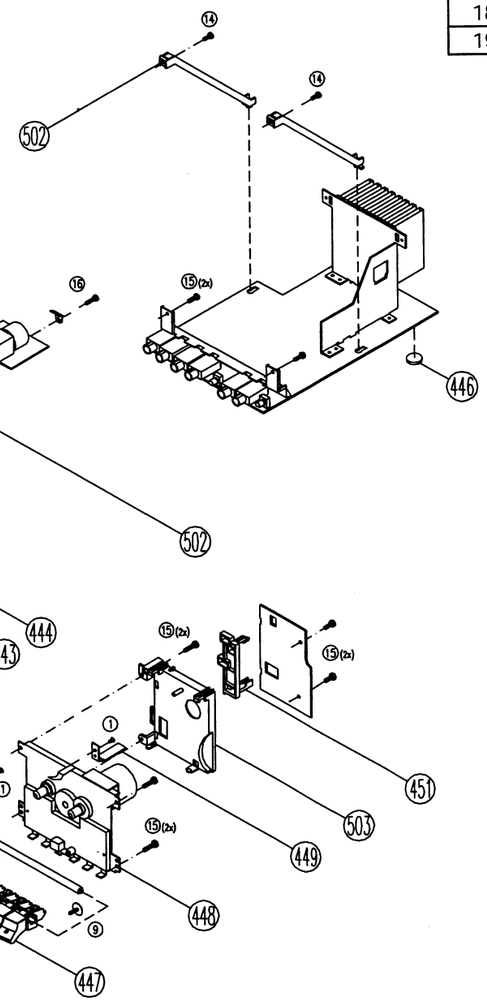
EXPLODED VIEW DIAGRAM - CABINET



12-1

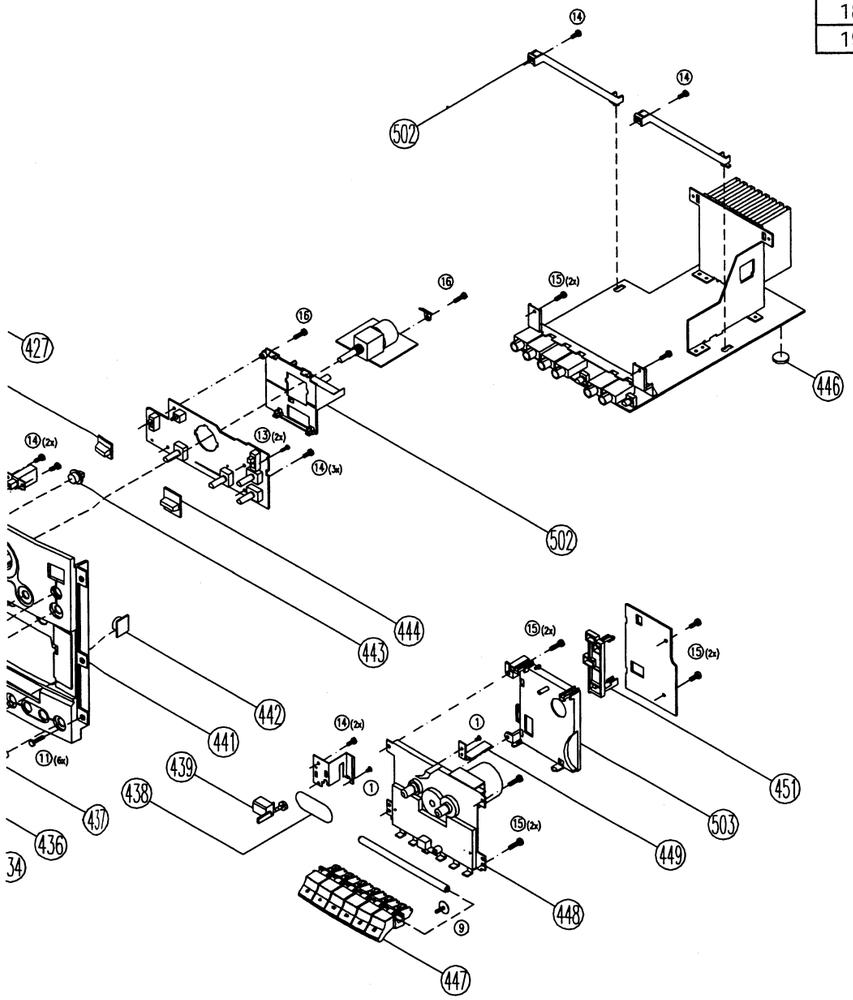
SCREW LIST :

1	C M2 x 3
2	C M2 x 6
3	C M3 x 20
4	C M4 x 20
5	C M4 x 25
6	C 4 x 11 (Self Tape)
7	C 4 x 18 (Self Tape)
8	C 3 x 8 (Counter Sink)
9	C P/W 2.5 x 10
10	T 3 x 10 (Self Tape)
11	T 3 x 15 (Self Tape)
12	T 2 x 6
13	T 2 x 8
14	T 3 x 8
15	T 3 x 10
16	T 3 x 12
17	T P/W 3 x 6
18	T P/W 3 x 10
19	T P/W 3 x 15



SCREW LIST :

1	C M2 x 3
2	C M2 x 6
3	C M3 x 20
4	C M4 x 20
5	C M4 x 25
6	C 4 x 11 (Self Tape)
7	C 4 x 18 (Self Tape)
8	C 3 x 8 (Counter Sink)
9	C P/W 2.5 x 10
10	T 3 x 10 (Self Tape)
11	T 3 x 15 (Self Tape)
12	T 2 x 6
13	T 2 x 8
14	T 3 x 8
15	T 3 x 10
16	T 3 x 12
17	T P/W 3 x 6
18	T P/W 3 x 10
19	T P/W 3 x 15



MECHANICAL PARTSLIST - CABINET

401	4822 443 10958	CD Door	438	4822 358 10261	Rubber Belt
402	4822 381 11977	CD Lens	439	4822 344 14041	Tape Counter
403	4822 462 11064	CD Knob Cap	441	4822 459 04985	Front Panel
404	4822 381 11976	LCD Lens	442	4822 529 10322	Damper Assy
406	4822 535 60096	Disc	443	4822 410 11815	DBB Knob
407	4822 402 61508	Bracket CD	444	4822 410 11818	Voice Knob
408	4822 532 12798	Pressure Ring Assy	446	4822 462 10965	Rubber Foot
409	4822 410 11812	CD Button	447	4822 410 11824	Play Button
411	4822 410 11813	CD Knob	447	4822 410 11825	Rev Button
412	4822 442 01374	Top Cabinet	447	4822 410 11826	F.F. Button
413	4822 256 10471	Display Holder	447	4822 410 11827	Pause Button
414	4822 529 10322	Damper Assy	447	4822 410 11828	Stop Button
416	4822 492 11418	Spring CD	447	4822 410 11829	Record Button
417	4822 410 11814	Bass Knob	448	4822 691 10709	Tape Deck Mechanism
418	4822 410 11821	Power Knob	449	4822 492 11658	Spring Recording
419	4822 410 11816	Volume Knob	451	4822 402 10126	Lever Recording
421	4822 381 11979	Remote Control Lens	452	4822 462 11061	Front Top Feet (R)
422	4822 529 10387	Damper Rubber (40 DEG)	453	4822 462 11059	Front Top Feet (L)
423	4822 529 10386	Damper Rubber (30 DEG)	454	4822 462 11063	Rear Top Feet (R)
424	4822 691 10654	CD Mechanism CD94V5T1	456	4822 462 11062	Rear Top Feet (L)
426	4822 410 11822	Mode Knob		4822 218 10754	Remote Control
427	4822 442 01096	CD Lens Cover		9082 145 00017	Microphone
428	4822 381 11978	Cass Lens		4822 321 10249	Mains Cord (For -/00/01)
429	4822 442 01372	Cass Door Cover		4822 321 10882	Mains Cord (For -/17)
431	4822 443 10959	Cass Door		4822 736 16123	Instruction Manual (For -/00)
432	4822 492 70231	Spring Leaf		4822 736 16124	Instruction Manual (For -/01)
433	4822 492 42709	Spring Door		4822 736 16125	Instruction Manual (For -/17)
434	4822 410 11819	Pitch Control Knob			
436	4822 410 11817	Echo Knob			
437	4822 410 11823	Mic Volume Knob			

Note : Only those parts mentioned in the list are normal service parts.

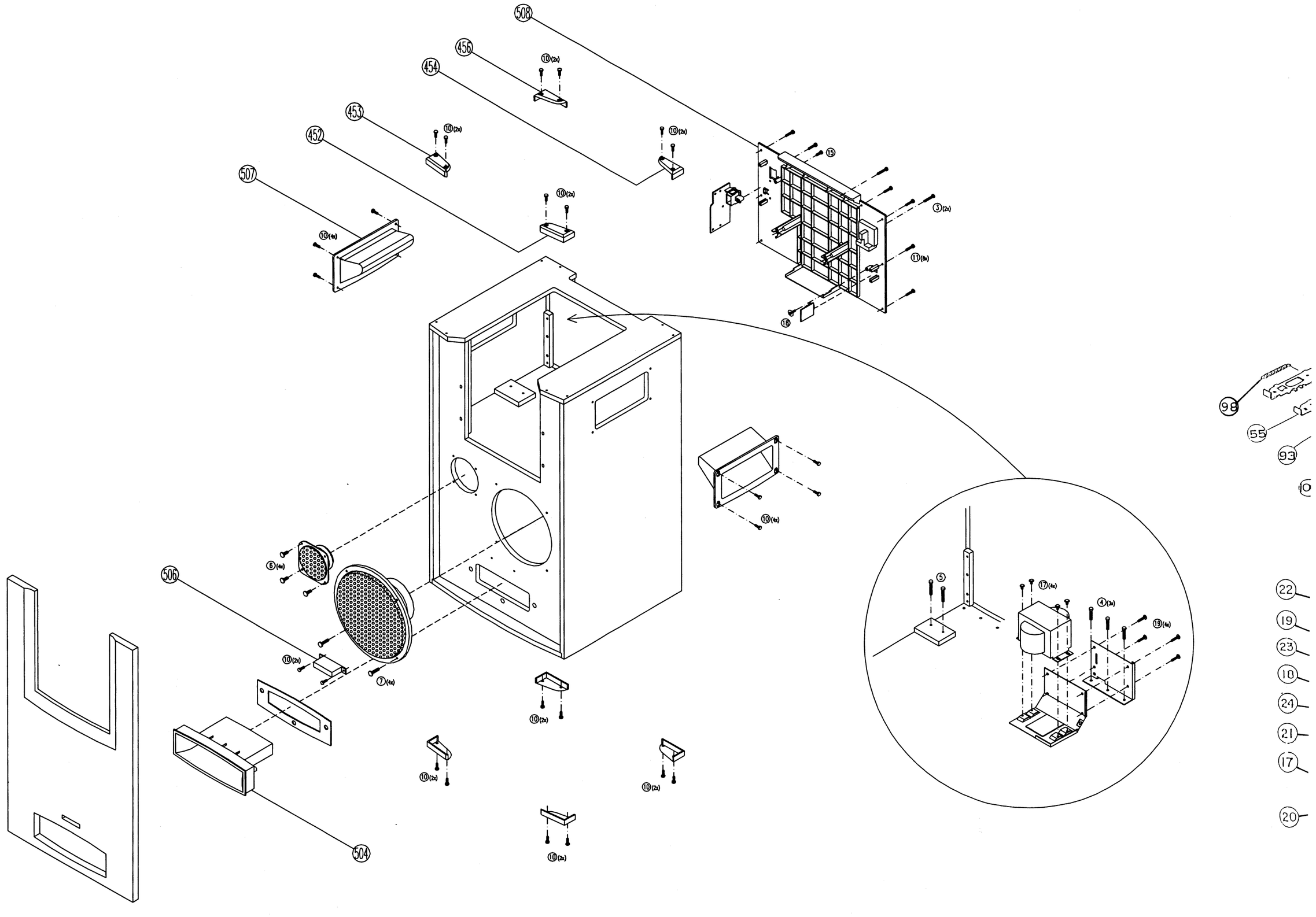
MECHANICAL PARTSLIST - TAPE DECK

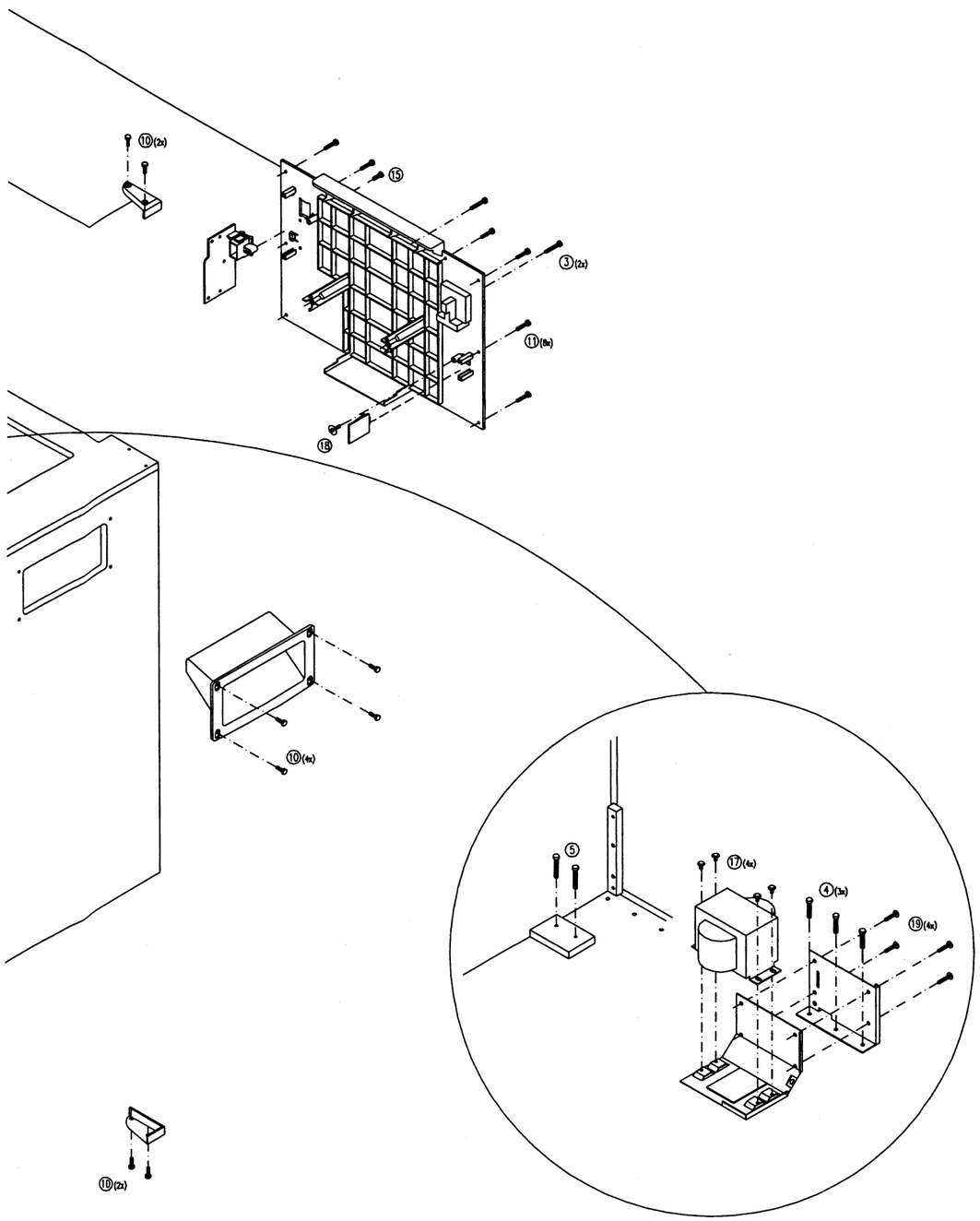
10	4822 402 11032	Pinch Roller Arm Assy	111	4822 249 30218	R/P Head MS15R-AA2N1
74	4822 528 70695	Eject Hook (B)	112	4822 249 10548	E. Head LE15B-C1
106	4822 358 31325	Main Belt 45.2 x 1.2	115	4822 361 21592	Motor EG-530YD-9BH
107	4822 358 31124	Sub Belt 44.7 x 1.2	116	4822 528 81497	Motor Pulley
110	4822 278 90721	Leaf Switch	131	4822 276 13712	Leaf Switch

Note : Only those parts mentioned in the list are normal service parts.

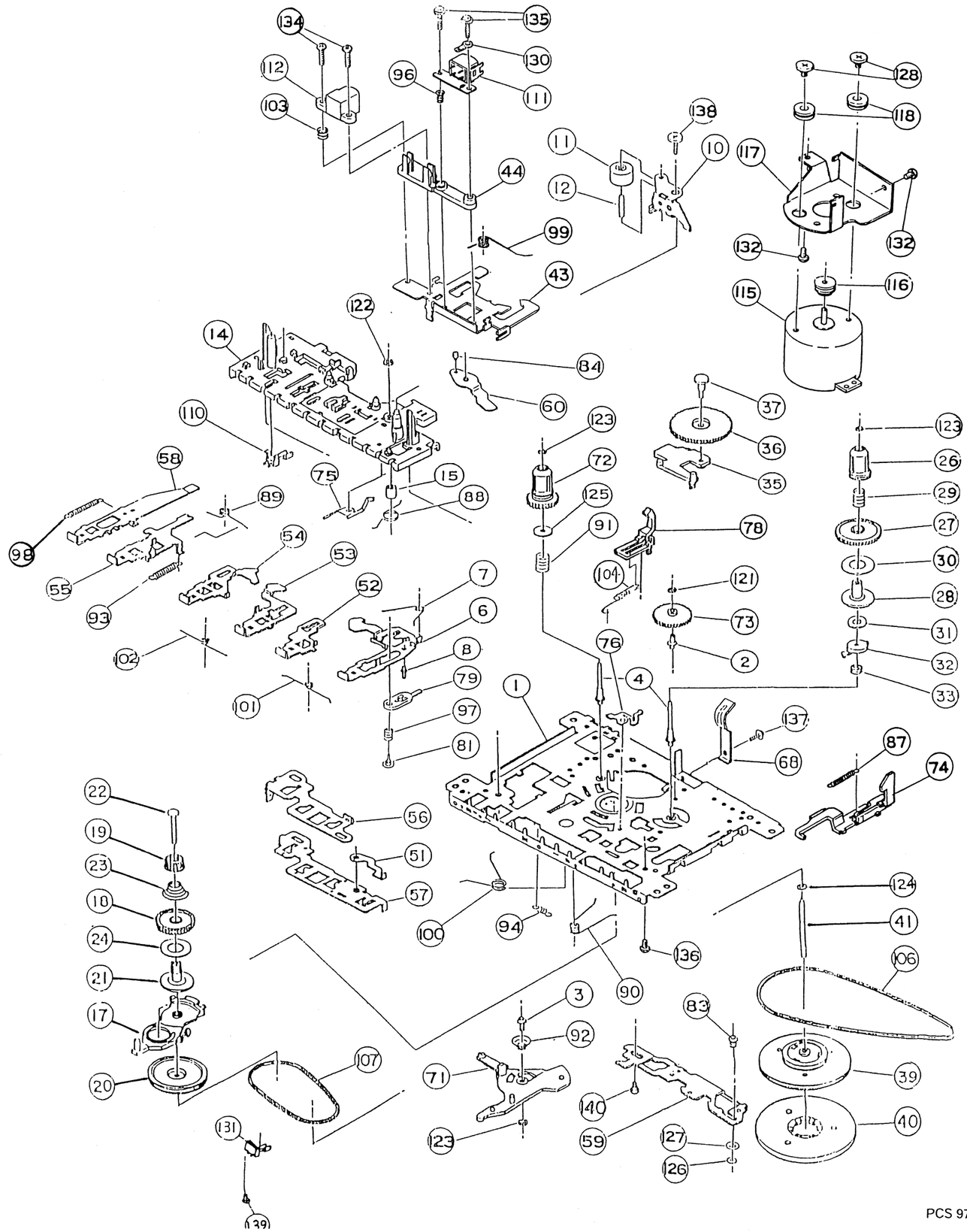
EXPLODED VIEW DIAGRAM - SPEAKER BOX

12-2





EXPLODED VIEW DIAGRAM - TAPE DECK



CD CONTROL BOARD

2400	4822 124 22652	2,2µF 20% 50V
2402	4822 122 33519	470pF 10% 50V
2403	4822 121 51387	10nF 20% 16V
2404	4822 121 51387	10nF 20% 16V
2405	4822 124 42446	100µF 20% 10V
2408	4822 126 12882	100nF +80-20% 50V
2413	4822 122 10466	220pF 10% 50V
2414	5322 122 34098	10nF 10%X7R 63V
2497	4822 126 12882	100nF +80-20% 50V
2498	4822 122 33519	470pF 10% 50V
2512	4822 124 80144	220µF 20% 25V

3402	4822 116 52234	100K 5% 0,5W
3403	4822 116 83872	220R 5% 0,5W
3404	4822 116 52234	100K 5% 0,5W
3405	4822 116 52234	100K 5% 0,5W
3406	4822 116 52238	12K 5% 0,5W
3407	4822 116 52276	3K9 5% 0,5W
3408	4822 116 83874	220K 5% 0,5W
3409	4822 116 52257	22K 5% 0,5W
3410	4822 116 52257	22K 5% 0,5W
3411	4822 116 52257	22K 5% 0,5W
3412	4822 116 52257	22K 5% 0,5W
3413	4822 050 21002	1K 1% 0,6W
3414	4822 050 21002	1K 1% 0,6W
3415	4822 050 21002	1K 1% 0,6W
3416	4822 050 21002	1K 1% 0,6W
3417	4822 050 21002	1K 1% 0,6W
3418	4822 116 52283	4K7 5% 0,5W
3419	4822 116 52231	820R 5% 0,5W
3420	4822 116 52231	820R 5% 0,5W
3421	4822 116 52231	820R 5% 0,5W
3422	4822 116 52283	4K7 5% 0,5W
3423	4822 116 52283	4K7 5% 0,5W
3424	4822 116 52283	4K7 5% 0,5W
3425	4822 050 21002	1K 1% 0,6W
3426	4822 116 52243	1K5 5% 0,5W

3427	4822 116 52269	3K3 5% 0,5W
3428	4822 050 21002	1K 1% 0,6W
3429	4822 050 21002	1K 1% 0,6W
3430	4822 116 52256	2K2 5% 0,5W
3431	4822 116 52269	3K3 5% 0,5W
3432	4822 116 52283	4K7 5% 0,5W
3434	4822 116 52303	8K2 5% 0,5W
3436	4822 116 52244	15K 5% 0,5W
3437	4822 116 83884	47K 5% 0,5W
3447	4822 116 52175	100R 5% 0,5W
3448	4822 116 52213	180R 5% 0,5W
3449	4822 050 21002	1K 1% 0,6W
3450	4822 050 21002	1K 1% 0,6W
3451	4822 116 52257	22K 5% 0,5W
3452	4822 050 21002	1K 1% 0,6W
3453	4822 116 52283	4K7 5% 0,5W
3454	4822 116 83868	150R 5% 0,5W
3455	4822 050 21002	1K 1% 0,6W
3458	4822 116 52257	22K 5% 0,5W
3459	4822 116 52249	1K8 5% 0,5W
3460	4822 116 52257	22K 5% 0,5W
3461	4822 050 21002	1K 1% 0,6W
3462	4822 116 52238	12K 5% 0,5W
3517	4822 050 21002	1K 1% 0,6W
3518	4822 116 52257	22K 5% 0,5W
3519	4822 116 52228	680R 5% 0,5W
3520	4822 050 21002	1K 1% 0,6W
3521	4822 116 52228	680R 5% 0,5W
3522	4822 116 52257	22K 5% 0,5W
3523	4822 116 52256	2K2 5% 0,5W
3524	4822 116 52256	2K2 5% 0,5W
3525	4822 116 83868	150R 5% 0,5W
3526	4822 116 83868	150R 5% 0,5W
3527	4822 116 83868	150R 5% 0,5W
3528	4822 116 83868	150R 5% 0,5W
3529	4822 116 83868	150R 5% 0,5W
3541	4822 101 11881	Var Resistor

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CD CONTROL BOARD

5400	4822 242 73769	Filter CST4,19MGW
5401	4822 157 11477	Coil LAL02TB2R2J
5402	4822 157 52333	Coil 100µH

6401	4822 130 30621	Diode 1N4148

7400	5322 209 11147	IC HEF4093BT
7401	4822 209 16462	IC TMP47C422-85000
7402	4822 130 40959	Trans BC547B
7403	4822 130 40959	Trans BC547B
7502	4822 130 40981	Trans BC337-25
7503	4822 130 40981	Trans BC337-25
7504	4822 130 40981	Trans BC337-25
7505	4822 130 40981	Trans BC337-25
7506	4822 130 40959	Trans BC547B
7507	4822 130 40959	Trans BC547B

- MISCELLANEOUS -

1400	4822 276 13114	Tact Switch
1401	4822 276 13114	Tact Switch
1402	4822 276 13114	Tact Switch
1403	4822 276 13114	Tact Switch
1404	4822 276 13114	Tact Switch
1405	4822 276 13114	Tact Switch
1406	4822 276 13114	Tact Switch
1408	4822 135 00211	LCD Display

Note : Only those parts mentioned in the list are normal service parts.

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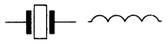
RECORDER BOARD

2700	4822 124 41397	47µF 20% 25V
2701	4822 124 40242	1µF 20% 63V
2703	4822 124 81151	22µF 50V
2704	4822 124 81151	22µF 50V
2706	4822 124 41397	47µF 20% 25V
2707	4822 124 80144	220µF 20% 25V
2708	4822 124 41584	100µF 20% 10V
2709	4822 124 41584	100µF 20% 10V
2710	4822 124 40246	4,7µF 20% 63V
2711	4822 124 81151	22µF 50V
2712	4822 122 33197	1nF 10% 50V
2713	5322 122 32311	470pF 10% 100V
2714	4822 126 12878	1,5nF 10% 16V
2715	4822 126 11585	22nF +80-20% Y5V 25V
2716	4822 126 11585	22nF +80-20% Y5V 25V
2717	4822 121 10746	6,8nF 10% 50V
2718	4822 126 12787	330pF 10% Y5V 50V
2719	4822 121 51305	15nF 10% 50V
2720	5322 122 32311	470pF 10% 100V
2721	4822 126 12878	1,5nF 10% 16V
2722	4822 126 11585	22nF +80-20% Y5V 25V
2723	4822 126 11585	22nF +80-20% Y5V 25V
2724	4822 121 10746	6,8nF 10% 50V
2725	4822 126 12787	330pF 10% Y5V 50V
2726	4822 121 51305	15nF 10% 50V
2727	4822 122 33197	1nF 10% 50V
2728	4822 126 11714	4,7nF 20%
2729	4822 126 11714	4,7nF 20%
2730	4822 121 51306	18nF 10% 50V
2731	4822 121 51304	10nF 10% 50V
2732	4822 126 11714	4,7nF 20%
2733	4822 121 51387	10nF 20% 16V
2736	4822 126 14316	680pF 10% 50V Y5P
2737	4822 126 14316	680pF 10% 50V Y5P
2738	4822 122 33519	470pF 10% 50V
2739	4822 122 33519	470pF 10% 50V

3700	4E	
3701	4E	
3702	4E	
3703	4E	
3704	4E	
3705	4E	
3706	4E	
3707	4E	
3708	4E	
3709	4E	
3710	4E	
3711	4E	
3712	4E	
3713	4E	
3714	4E	
3715	4E	
3716	4E	
3717	4E	
3718	4E	
3719	4E	
3720	4E	
3721	4E	
3722	4E	
3723	4E	
3724	4E	
3725	4E	
3726	4E	
3727	4E	
3728	4E	
3729	4E	
3730	4E	
3731	4E	
3732	4E	
3733	4E	
3734	4E	
3735	4E	
3736	4E	
3737	4E	
3738	4E	
3739	4E	

CD CONTROL BOARD



5400	4822 242 73769	Filter CST4,19MGW
5401	4822 157 11477	Coil LAL02TB2R2J
5402	4822 157 52333	Coil 100µH

6401	4822 130 30621	Diode 1N4148

7400	5322 209 11147	IC HEF4093BT
7401	4822 209 16462	IC TMP47C422-85000
7402	4822 130 40959	Trans BC547B
7403	4822 130 40959	Trans BC547B
7502	4822 130 40981	Trans BC337-25
7503	4822 130 40981	Trans BC337-25
7504	4822 130 40981	Trans BC337-25
7505	4822 130 40981	Trans BC337-25
7506	4822 130 40959	Trans BC547B
7507	4822 130 40959	Trans BC547B

- MISCELLANEOUS -

1400	4822 276 13114	Tact Switch
1401	4822 276 13114	Tact Switch
1402	4822 276 13114	Tact Switch
1403	4822 276 13114	Tact Switch
1404	4822 276 13114	Tact Switch
1405	4822 276 13114	Tact Switch
1406	4822 276 13114	Tact Switch
1408	4822 135 00211	LCD Display

Note : Only those parts mentioned in the list are normal service parts.

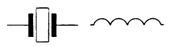
RECORDER BOARD

2700	4822 124 41397	47µF	20% 25V
2701	4822 124 40242	1µF	20% 63V
2703	4822 124 81151	22µF	50V
2704	4822 124 81151	22µF	50V
2706	4822 124 41397	47µF	20% 25V
2707	4822 124 80144	220µF	20% 25V
2708	4822 124 41584	100µF	20% 10V
2709	4822 124 41584	100µF	20% 10V
2710	4822 124 40246	4,7µF	20% 63V
2711	4822 124 81151	22µF	50V
2712	4822 122 33197	1nF	10% 50V
2713	5322 122 32311	470pF	10% 100V
2714	4822 126 12878	1,5nF	10% 16V
2715	4822 126 11585	22nF	+80-20% Y5V 25V
2716	4822 126 11585	22nF	+80-20% Y5V 25V
2717	4822 121 10746	6,8nF	10% 50V
2718	4822 126 12787	330pF	10% Y5V 50V
2719	4822 121 51305	15nF	10% 50V
2720	5322 122 32311	470pF	10% 100V
2721	4822 126 12878	1,5nF	10% 16V
2722	4822 126 11585	22nF	+80-20% Y5V 25V
2723	4822 126 11585	22nF	+80-20% Y5V 25V
2724	4822 121 10746	6,8nF	10% 50V
2725	4822 126 12787	330pF	10% Y5V 50V
2726	4822 121 51305	15nF	10% 50V
2727	4822 122 33197	1nF	10% 50V
2728	4822 126 11714	4,7nF	20%
2729	4822 126 11714	4,7nF	20%
2730	4822 121 51306	18nF	10% 50V
2731	4822 121 51304	10nF	10% 50V
2732	4822 126 11714	4,7nF	20%
2733	4822 121 51387	10nF	20% 16V
2736	4822 126 14316	680pF	10% 50V Y5P
2737	4822 126 14316	680pF	10% 50V Y5P
2738	4822 122 33519	470pF	10% 50V
2739	4822 122 33519	470pF	10% 50V

3700	4822 116 83883	470R	5% 0,5W
3701	4822 116 83883	470R	5% 0,5W
3702	4822 116 52175	100R	5% 0,5W
3703	4822 116 52195	47R	5% 0,5W
3704	4822 116 83883	470R	5% 0,5W
3705	4822 116 83872	220R	5% 0,5W
3706	4822 116 52245	150K	5% 0,5W
3707	4822 116 52245	150K	5% 0,5W
3708	4822 116 52283	4K7	5% 0,5W
3709	4822 116 52283	4K7	5% 0,5W
3710	4822 116 83864	10K	5% 0,5W
3711	4822 050 21002	1K	1% 0,6W
3712	4822 116 52303	8K2	5% 0,5W
3713	4822 116 52195	47R	5% 0,5W
3714	4822 116 83883	470R	5% 0,5W
3715	4822 116 83872	220R	5% 0,5W
3716	4822 116 52245	150K	5% 0,5W
3717	4822 116 52283	4K7	5% 0,5W
3718	4822 116 52283	4K7	5% 0,5W
3719	4822 116 83864	10K	5% 0,5W
3720	4822 116 52303	8K2	5% 0,5W
3721	4822 050 21002	1K	1% 0,6W
3722	4822 116 52257	22K	5% 0,5W
3723	4822 116 52257	22K	5% 0,5W
3724	4822 116 83864	10K	5% 0,5W
3725	4822 116 52256	2K2	5% 0,5W
3726	4822 116 52256	2K2	5% 0,5W
3727	4822 116 52256	2K2	5% 0,5W
3728	4822 116 83864	10K	5% 0,5W
3729	4822 116 52256	2K2	5% 0,5W
3730	4822 116 83868	150R	5% 0,5W
3731	4822 116 83864	10K	5% 0,5W
3732	4822 116 52176	10R	5% 0,5W
3733	4822 111 30893	4M7	5% 0,2W
3734	4822 116 83864	10K	5% 0,5W
3735	4822 050 21002	1K	1% 0,6W
3736	4822 116 83884	47K	5% 0,5W
3737	4822 116 83864	10K	5% 0,5W
3738	4822 116 52234	100K	5% 0,5W
3739	4822 116 83864	10K	5% 0,5W

RECORDER BOARD

3740	4822 116 52303	8K2	5% 0,5W
3741	4822 052 10478	4R7	5% 0,33W
3742	4822 116 83868	150R	5% 0,5W
3743	4822 116 52269	3K3	5% 0,5W
3744	4822 116 52269	3K3	5% 0,5W
3745	4822 116 83864	10K	5% 0,5W
3746	4822 116 83864	10K	5% 0,5W
3747	4822 116 83872	220R	5% 0,5W
3747	4822 116 52175	100R	5% 0,5W
3748	4822 116 52256	2K2	5% 0,5W
3749	4822 116 52256	2K2	5% 0,5W



5701	4822 157 10371	Coil

6704	4822 130 30621	Diode 1N4148

7701	4822 130 40937	Trans BC548B
7702	4822 130 40981	Trans BC337-25
7703	4822 130 40981	Trans BC337-25
7704	4822 130 40981	Trans BC337-25
7705	4822 209 32918	IC AN7318S
7706	4822 130 44196	Trans BC548C
7707	4822 130 44196	Trans BC548C

- MISCELLANEOUS -

1707	4822 277 11504	Push Switch

Note : Only those parts mentioned in the list are normal service parts.

AF CONTROL & POWER BOARD

2201	4822 124 40239	0,47µF 20% 63V
2203	4822 122 33848	47pF 5% SL 50V
2204	5322 124 41948	470nF 20% 50V
2205	4822 124 40242	1µF 20% 63V
2206	4822 126 11714	4,7nF 20%
2207	4822 124 40239	0,47µF 20% 63V
2208	4822 122 33197	1nF 10% 50V
2209	4822 122 33848	47pF 5% SL 50V
2210	5322 124 41948	470nF 20% 50V
2211	4822 124 40242	1µF 20% 63V
2212	4822 124 40242	1µF 20% 63V
2213	4822 126 12339	2,2nF 10% Y5R
2214	4822 126 12339	2,2nF 10% Y5R
2215	4822 126 12882	100nF +80-20% 50V
2216	4822 126 13581	0.22µF 20% 50V
2217	4822 126 13581	0.22µF 20% 50V
2218	4822 124 40242	1µF 20% 63V
2219	4822 126 12339	2,2nF 10% Y5R
2220	4822 126 12882	100nF +80-20% 50V
2221	4822 121 51387	10nF 20% 16V
2222	4822 124 40433	47µF 20% 25V
2223	4822 122 33195	100pF 10% 50V
2224	4822 124 12068	220µF 20% 10V
2225	4822 124 40242	1µF 20% 63V
2226	4822 124 40242	1µF 20% 63V
2227	4822 124 40242	1µF 20% 63V
2228	4822 122 33195	100pF 10% 50V
2229	5322 124 41948	470nF 20% 50V
2230	4822 126 12339	2,2nF 10% Y5R
2231	5322 124 41948	470nF 20% 50V
2232	4822 124 80144	220µF 20% 25V
2233	4822 124 40248	10µF 20% 63V
2234	4822 124 40248	10µF 20% 63V
2235	4822 124 40248	10µF 20% 63V
2236	4822 124 40248	10µF 20% 63V
2237	4822 122 33197	1nF 10% 50V
2238	4822 122 33197	1nF 10% 50V
2239	4822 124 40248	10µF 20% 63V
2240	4822 124 40248	10µF 20% 63V
2243	4822 124 40242	1µF 20% 63V

2244	4822 124 42446	100µF 20% 10V
2245	4822 124 40248	10µF 20% 63V
2246	4822 124 40248	10µF 20% 63V
2247	4822 126 12882	100nF +80-20% 50V
2248	4822 126 12882	100nF +80-20% 50V
2249	4822 126 12882	100nF +80-20% 50V
2250	4822 126 13581	0.22µF 20% 50V
2251	4822 121 51399	47nF 10% 50V
2252	4822 124 40242	1µF 20% 63V
2253	4822 122 33197	1nF 10% 50V
2254	4822 122 33197	1nF 10% 50V
2256	4822 126 12882	100nF +80-20% 50V
2257	4822 124 80144	220µF 20% 25V
2258	4822 124 40242	1µF 20% 63V
2259	4822 124 40242	1µF 20% 63V
2260	4822 126 12785	47nF Y5VTUB 50V
2261	4822 126 12785	47nF Y5VTUB 50V
2262	4822 126 12785	47nF Y5VTUB 50V
2263	4822 126 11714	4,7nF 20%
2264	4822 122 33519	470pF 10% 50V
2265	4822 122 33519	470pF 10% 50V
2266	4822 126 12878	1,5nF 10% 16V
2267	4822 121 51387	10nF 20% 16V
2268	4822 121 51387	10nF 20% 16V
2269	4822 121 51387	10nF 20% 16V
2270	4822 121 51387	10nF 20% 16V
2271	4822 126 12785	47nF Y5VTUB 50V
2272	4822 126 12785	47nF Y5VTUB 50V
2273	4822 126 12785	47nF Y5VTUB 50V
2274	4822 124 40433	47µF 20% 25V
2275	4822 124 12068	220µF 20% 10V
2276	4822 124 81136	100µF 25V
2277	4822 124 40433	47µF 20% 25V
2278	4822 124 40433	47µF 20% 25V
2279	4822 124 42446	100µF 20% 10V
2280	4822 124 40433	47µF 20% 25V
2281	4822 124 81136	100µF 25V
2282	4822 121 51387	10nF 20% 16V
2283	4822 121 51387	10nF 20% 16V
2284	4822 124 81136	100µF 25V

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AF CONTROL & POWER BOARD

2285	4822 124 81136	100µF 25V
2286	4822 124 81136	100µF 25V
2287	5322 121 42386	100nF 5% 63V
2288	5322 121 42386	100nF 5% 63V
2290	4822 126 12882	100nF +80-20% 50V
2291	4822 126 12882	100nF +80-20% 50V
2292	4822 122 33519	470pF 10% 50V
2293	4822 122 10466	220pF 10% 50V
2294	4822 122 33519	470pF 10% 50V
2295	4822 122 10466	220pF 10% 50V
2296	5322 121 42386	100nF 5% 63V
2297	5322 121 42386	100nF 5% 63V
2298	5322 121 42386	100nF 5% 63V
2299	4822 124 80563	4700µF 20% 35V
2300	4822 124 11909	470µF 20% 25V
2301	4822 124 81136	100µF 25V
2302	5322 121 42386	100nF 5% 63V
2306	4822 122 33195	100pF 10% 50V
2307	4822 122 33195	100pF 10% 50V
2308	4822 122 33195	100pF 10% 50V
2309	4822 122 33195	100pF 10% 50V
2310	4822 122 33195	100pF 10% 50V
2311	4822 122 33195	100pF 10% 50V
2312	4822 122 33519	470pF 10% 50V
2313	4822 122 33519	470pF 10% 50V
2320	4822 124 40433	47µF 20% 25V
2325	4822 124 40242	1µF 20% 63V
2326	4822 126 12882	100nF +80-20% 50V
2327	4822 124 40242	1µF 20% 63V
2383	4822 126 11714	4,7nF 20%
2384	4822 122 33197	1nF 10% 50V
2385	4822 126 12882	100nF +80-20% 50V
2387	4822 126 12882	100nF +80-20% 50V
2388	4822 126 12882	100nF +80-20% 50V
2389	4822 124 40248	10µF 20% 63V
2390	4822 124 11909	470µF 20% 25V
2391	4822 124 40242	1µF 20% 63V
2392	4822 122 33197	1nF 10% 50V
2393	4822 124 41576	2,2µF 20% 50V
2394	4822 122 10319	82pF 5% 50V

2395	4822 124 42446	100µF 20% 10V
2396	4822 122 33519	470pF 10% 50V
2397	4822 122 33519	470pF 10% 50V
2398	4822 122 33197	1nF 10% 50V
2399	4822 126 11714	4,7nF 20%
2500	4822 122 33848	47pF 5% SL 50V
2501	4822 124 40248	10µF 20% 63V
2502	4822 121 51387	10nF 20% 16V
2503	4822 121 10684	68nF 10% 50V
2504	5322 121 42386	100nF 5% 63V
2505	4822 121 51387	10nF 20% 16V
2506	4822 124 40248	10µF 20% 63V
2507	4822 122 33519	470pF 10% 50V
2508	4822 124 81136	100µF 25V
2509	4822 124 40248	10µF 20% 63V
2510	4822 124 40248	10µF 20% 63V
2511	5322 121 42386	100nF 5% 63V
2517	4822 121 51387	10nF 20% 16V
2519	4822 124 40248	10µF 20% 63V
2520	4822 124 40248	10µF 20% 63V
2599	4822 122 33848	47pF 5% SL 50V

3200	4822 116 83884	47K 5% 0,5W
3201	4822 116 52256	2K2 5% 0,5W
3202	4822 116 52291	56K 5% 0,5W
3203	4822 116 52272	330K 5% 0,5W
3204	4822 116 52263	2K7 5% 0,5W
3205	4822 116 52263	2K7 5% 0,5W
3206	4822 101 21204	VR 20KA
3207	4822 116 52276	3K9 5% 0,5W
3208	4822 116 52235	1M 5% 0,5W
3209	4822 050 21002	1K 1% 0,6W
3210	4822 116 83884	47K 5% 0,5W
3211	4822 116 52263	2K7 5% 0,5W
3212	4822 116 52256	2K2 5% 0,5W
3213	4822 116 52291	56K 5% 0,5W
3214	4822 116 52272	330K 5% 0,5W

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3215	4822 116 52263	2K7 5% 0,5W
3216	4822 101 21204	VR 20KA
3217	4822 116 52276	3K9 5% 0,5W
3218	4822 050 21002	1K 1% 0,6W
3219	4822 116 52235	1M 5% 0,5W
3220	4822 116 52271	33K 5% 0,5W
3221	4822 116 52271	33K 5% 0,5W
3222	4822 116 52271	33K 5% 0,5W
3223	4822 116 52191	33R 5% 0,5W
3224	4822 116 52264	27K 5% 0,5W
3225	4822 116 52244	15K 5% 0,5W
3226	4822 116 52244	15K 5% 0,5W
3227	4822 116 52271	33K 5% 0,5W
3228	4822 116 52271	33K 5% 0,5W
3229	4822 116 52271	33K 5% 0,5W
3230	4822 116 52264	27K 5% 0,5W
3231	4822 116 52176	10R 5% 0,5W
3232	4822 116 52263	2K7 5% 0,5W
3233	4822 116 83874	220K 5% 0,5W
3234	4822 116 83882	39K 5% 0,5W
3235	4822 116 52251	18K 5% 0,5W
3236	4822 116 83961	6K8 5%
3237	4822 116 83961	6K8 5%
3238	4822 116 83961	6K8 5%
3239	4822 116 83874	220K 5% 0,5W
3240	4822 116 52305	820K 5% 0,5W
3241	4822 116 52244	15K 5% 0,5W
3242	4822 116 52234	100K 5% 0,5W
3243	4822 116 52175	100R 5% 0,5W
3244	4822 116 52264	27K 5% 0,5W
3245	4822 116 52304	82K 5% 0,5W
3246	4822 116 52244	15K 5% 0,5W
3247	4822 116 52264	27K 5% 0,5W
3248	4822 116 52257	22K 5% 0,5W
3249	4822 116 52257	22K 5% 0,5W
3250	4822 116 52238	12K 5% 0,5W
3251	4822 116 52244	15K 5% 0,5W
3252	4822 116 52244	15K 5% 0,5W
3253	4822 116 52244	15K 5% 0,5W
3254	4822 116 52244	15K 5% 0,5W

3255	4822 116 52238	12K 5% 0,5W
3256	4822 116 52244	15K 5% 0,5W
3257	4822 116 52244	15K 5% 0,5W
3258	4822 116 52304	82K 5% 0,5W
3259	4822 116 52244	15K 5% 0,5W
3260	4822 116 52235	1M 5% 0,5W
3261	4822 116 52235	1M 5% 0,5W
3262	4822 116 52257	22K 5% 0,5W
3263	4822 116 52257	22K 5% 0,5W
3267	4822 116 52251	18K 5% 0,5W
3268	4822 116 52269	3K3 5% 0,5W
3269	4822 116 52269	3K3 5% 0,5W
3270	4822 116 52251	18K 5% 0,5W
3271	4822 116 52276	3K9 5% 0,5W
3272	4822 116 52276	3K9 5% 0,5W
3273	4822 116 83874	220K 5% 0,5W
3274	4822 116 83874	220K 5% 0,5W
3275	4822 116 83874	220K 5% 0,5W
3276	4822 116 52257	22K 5% 0,5W
3277	4822 116 52257	22K 5% 0,5W
3281	4822 116 52257	22K 5% 0,5W
3282	4822 116 52257	22K 5% 0,5W
3283	4822 116 52303	8K2 5% 0,5W
3284	4822 116 52303	8K2 5% 0,5W
3285	4822 050 21002	1K 1% 0,6W
3286	4822 050 21002	1K 1% 0,6W
3287	4822 116 83884	47K 5% 0,5W
3288	4822 116 83884	47K 5% 0,5W
3289	4822 116 52175	100R 5% 0,5W
3290	4822 116 83864	10K 5% 0,5W
3291	4822 116 83864	10K 5% 0,5W
3292	4822 050 21002	1K 1% 0,6W
3293	4822 116 83864	10K 5% 0,5W
3294	4822 116 83864	10K 5% 0,5W
3295	4822 116 52283	4K7 5% 0,5W
3296	4822 116 83864	10K 5% 0,5W
3297	4822 116 83864	10K 5% 0,5W
3298	4822 116 83864	10K 5% 0,5W
3299	4822 116 52283	4K7 5% 0,5W
3300	4822 116 83864	10K 5% 0,5W

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3301	4822 116 83864	10K 5% 0,5W
3302	4822 116 52283	4K7 5% 0,5W
3303	4822 116 52283	4K7 5% 0,5W
3304	4822 111 30893	4M7 5% 0,2W
3305	4822 111 30893	4M7 5% 0,2W
3306	4822 111 30893	4M7 5% 0,2W
3307	4822 116 52235	1M 5% 0,5W
3308	4822 116 83864	10K 5% 0,5W
3309	4822 116 83864	10K 5% 0,5W
3310	4822 116 83864	10K 5% 0,5W
3311	4822 116 52191	33R 5% 0,5W
3312	4822 116 52219	330R 5% 0,5W
3313	4822 116 83961	6K8 5%
3314	4822 052 10228	2R2 5% 0,33W
3315	4822 052 10228	2R2 5% 0,33W
3316	4822 116 83884	47K 5% 0,5W
3317	4822 116 83881	390R 5% 0,5W
3318	4822 052 10229	22R 5% 0,33W
3319	4822 116 52257	22K 5% 0,5W
3320	4822 116 52257	22K 5% 0,5W
3321	4822 116 52199	68R 5% 0,5W
3322	4822 116 52199	68R 5% 0,5W
3323	4822 116 52238	12K 5% 0,5W
3324	4822 050 21002	1K 1% 0,6W
3325	4822 116 83874	220K 5% 0,5W
3326	4822 116 83884	47K 5% 0,5W
3327	4822 116 83884	47K 5% 0,5W
3328	4822 116 52238	12K 5% 0,5W
3329	4822 116 83874	220K 5% 0,5W
3330	4822 050 21002	1K 1% 0,6W
3331	4822 116 52269	3K3 5% 0,5W
3332	4822 116 52304	82K 5% 0,5W
3333	4822 052 10228	2R2 5% 0,33W
3334	4822 116 81753	4R7 5% 0,5W
3335	4822 116 52191	33R 5% 0,5W
3336	4822 050 21002	1K 1% 0,6W
3337	4822 050 21002	1K 1% 0,6W
3343	4822 116 52175	100R 5% 0,5W
3344	4822 100 20165	500R 30%LIN 0,1W
3345	4822 050 21002	1K 1% 0,6W

3367	4822 116 52219	330R 5% 0,5W
3368	4822 116 52257	22K 5% 0,5W
3369	4822 116 52263	2K7 5% 0,5W
3370	4822 116 52283	4K7 5% 0,5W
3371	4822 116 52271	33K 5% 0,5W
3372	4822 116 52271	33K 5% 0,5W
3373	4822 116 52289	5K6 5% 0,5W
3374	4822 116 52257	22K 5% 0,5W
3375	4822 116 83961	6K8 5%
3376	4822 116 83864	10K 5% 0,5W
3377	4822 116 52264	27K 5% 0,5W
3378	4822 050 21002	1K 1% 0,6W
3379	4822 050 21002	1K 1% 0,6W
3380	4822 116 83884	47K 5% 0,5W
3381	4822 050 21002	1K 1% 0,6W
3382	4822 050 21002	1K 1% 0,6W
3383	4822 116 52234	100K 5% 0,5W
3384	4822 116 83884	47K 5% 0,5W
3385	4822 116 52283	4K7 5% 0,5W
3386	4822 116 52283	4K7 5% 0,5W
3387	4822 116 52283	4K7 5% 0,5W
3388	4822 116 52283	4K7 5% 0,5W
3389	4822 050 21002	1K 1% 0,6W
3390	4822 050 21002	1K 1% 0,6W
3500	4822 116 52283	4K7 5% 0,5W
3501	4822 116 52264	27K 5% 0,5W
3502	4822 116 52276	3K9 5% 0,5W
3503	4822 116 52269	3K3 5% 0,5W
3504	4822 101 11882	VR 20K
3505	4822 116 52269	3K3 5% 0,5W
3506	4822 116 52283	4K7 5% 0,5W
3507	4822 116 52243	1K5 5% 0,5W
3508	4822 101 11882	VR 20K
3509	4822 116 52175	100R 5% 0,5W
3510	4822 116 52276	3K9 5% 0,5W
3511	4822 116 83882	39K 5% 0,5W
3512	4822 116 83961	6K8 5%
3513	4822 116 52243	1K5 5% 0,5W
3514	4822 116 83884	47K 5% 0,5W
3515	4822 050 21002	1K 1% 0,6W

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3539	4822 101 11882	VR 20K
3542	4822 050 21002	1K 1% 0,6W
3544	4822 116 52257	22K 5% 0,5W
3545	4822 116 83872	220R 5% 0,5W
3546	4822 116 83864	10K 5% 0,5W
3547	4822 101 11883	VR 20K
3552	4822 116 52219	330R 5% 0,5W
3554	4822 116 83882	39K 5% 0,5W
3555	4822 116 52234	100K 5% 0,5W
3556	4822 116 52256	2K2 5% 0,5W
3558	4822 116 52234	100K 5% 0,5W
3559	4822 116 52234	100K 5% 0,5W
3561	4822 116 83864	10K 5% 0,5W
3587	4822 116 52264	27K 5% 0,5W
3591	4822 116 52276	3K9 5% 0,5W
3592	4822 116 83961	6K8 5%
3593	4822 116 81753	4R7 5% 0,5W
3594	4822 116 52256	2K2 5% 0,5W
3595	4822 116 83883	470R 5% 0,5W
3597	4822 116 52191	33R 5% 0,5W
3598	4822 116 83876	270R 5% 0,5W
3599	4822 050 21002	1K 1% 0,6W

5200	4822 157 53473	Coil 1000µH 10%
5201	4822 157 53473	Coil 1000µH 10%
5202	4822 242 81357	Filter
5203	4822 157 11517	Coil 10µH 5%
5204	4822 157 71285	Coil 400µH 30%

6200	4822 130 30621	Diode 1N4148
6201	4822 130 30621	Diode 1N4148
6202	4822 130 82079	Diode D3SBA20
6203	4822 130 80791	Diode BYV28-200/20
6204	4822 130 34382	Diode BZX79-B8V2
6206	4822 130 31878	Diode 1N4003G
6207	4822 130 30621	Diode 1N4148
6208	4822 130 30621	Diode 1N4148
6209	4822 130 30621	Diode 1N4148
6210	4822 130 30621	Diode 1N4148
6211	4822 130 30621	Diode 1N4148
6212	4822 130 30621	Diode 1N4148
6222	4822 130 10418	LED LTL16KGE
6223	4822 130 10418	LED LTL16KGE
6224	4822 130 10418	LED LTL16KGE
6225	4822 130 10418	LED LTL16KGE
6226	4822 130 31878	Diode 1N4003G
6227	4822 130 30621	Diode 1N4148
6229	4822 130 11239	LED LTL-2211AT
6230	4822 130 34174	Diode BZX79-B4V7
6231	4822 130 30621	Diode 1N4148
6232	4822 130 34278	Diode BZX79-B6V8
6500	4822 130 31878	Diode 1N4003G

7200	4822 209 90407	IC M65844P
7201	4822 130 61755	Trans BC560C
7202	4822 130 41096	Trans BC550C
7203	4822 130 40959	Trans BC547B
7204	4822 130 40959	Trans BC547B
7205	4822 130 61755	Trans BC560C
7206	4822 130 41096	Trans BC550C
7207	4822 130 40959	Trans BC547B
7208	4822 130 40959	Trans BC547B
7209	4822 130 41096	Trans BC550C
7210	4822 130 41096	Trans BC550C
7211	4822 209 10263	IC HEF4052BP
7212	4822 209 90408	IC BA3837
7213	4822 130 41096	Trans BC550C
7214	4822 130 41096	Trans BC550C
7216	4822 209 90409	IC M65840FP
7217	4822 209 31378	IC NJM4556MB
7218	4822 209 90411	IC AN7164
7219	4822 130 40995	Trans BD438
7220	4822 209 80817	IC L7805CV
7229	4822 130 40981	Trans BC337-25
7230	4822 130 41096	Trans BC550C
7231	4822 130 40981	Trans BC337-25
7232	4822 130 40981	Trans BC337-25
7233	4822 130 40959	Trans BC547B

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7234	4822 130 40959	Trans BC547B
7235	4822 130 40981	Trans BC337-25
7236	5322 130 44647	Trans BC368
7500	4822 130 41096	Trans BC550C
7501	4822 130 41096	Trans BC550C
7513	4822 130 10165	Sensor GP1U28XP
7514	4822 130 11241	Trans BS107
7517	4822 130 40981	Trans BC337-25

- MISCELLANEOUS -

1000		4822 240 10288	Loudspeaker 6.5" 30W
1001		4822 240 10289	Loudspeaker 2.5" 30W
1003	⚠	4822 146 10983	Transformer (For -/00)
1003	⚠	4822 146 10984	Transformer (For -/01)
1003	⚠	4822 146 10985	Transformer (For -/17)
1006		4822 276 13963	CD Door Switch
1008		4822 276 13963	CD Door Switch
1200		4822 265 11288	Mic Socket
1201		4822 265 11288	Mic Socket
1202		4822 265 11288	Line Socket
1205		4822 265 11289	Line Socket
1206		4822 265 11289	Line Socket
1207		4822 265 11291	Headphone Socket
1209		4822 265 31015	Mains Socket (For -/00/01)
1209		4822 265 31016	Mains Socket (For -/17)
1210	⚠	4822 272 10315	Voltage Selector (For -/01)
1211	⚠	4822 253 30474	Fuse 5A
1214		4822 265 11292	DC Socket
1226	⚠	4822 070 34002	Fuse 4A (For -/00/01)
1226	⚠	4822 252 51123	Fuse 6.3A (For -/17)
1500		4822 276 12648	Push Switch
1508		4822 277 11774	Slide Switch
1509		4822 277 11775	Slide Switch
8004		4822 320 12336	Flexible Foil 240mm
8009		4822 320 12335	Flexible Foil 120mm

Note : Only those parts mentioned in the list are normal service parts.

CD97 (MK I)

2802	4822 126 12785	47nF +80-20% 50V
2803	4822 126 11585	47nF +80-20% 50V
2804	4822 126 12878	1,5nF 10% 16V
2805	4822 121 51412	560nF 10% 50V
2806	4822 122 33519	470pF 10% 50V
2807	4822 122 33191	18pF 5% 50V
2808	4822 124 22263	220µF 20% 25V
2809	4822 124 40242	1µF 20% 50V
2810	4822 124 40242	1µF 20% 50V
2811	4822 122 33849	150pF 10% 50V
2812	4822 122 33849	150pF 10% 50V
2813	4822 126 12339	2,2nF 10% 16V
2814	4822 126 13677	39pF 5% 50V
2815	4822 126 12882	100nF 8.2% 50V
2816	4822 124 41407	0,47µF 20% 50V
2817	4822 121 42687	3,3nF 10% 50V
2818	4822 124 40242	1µF 20% 50V
2819	5322 121 42386	100nF 10% 50V
2820	4822 124 40746	0,22µF 20% 50V
2821	4822 124 41579	10µF 20% 50V
2822	4822 122 10167	22nF 30% 50V
2823	4822 124 40246	4,7µF 20% 50V
2824	4822 124 41407	0,47µF 20% 50V
2825	4822 122 10462	15pF 5% NP0
2826	4822 124 41407	0,47µF 20% 50V
2827	4822 124 40433	47µF 20% 25V
2828	4822 124 41579	10µF 20% 50V
2829	5322 121 42489	33nF 10% 50V
2830	4822 122 10319	82pF 10% 50V
2831	4822 121 41856	22nF 10% 50V
2832	4822 124 41576	2,2µF 20% 50V
2833	4822 124 40433	47µF 20% 25V
2834	4822 126 12882	100nF +80-20% 50V
2835	4822 126 12882	100nF +80-20% 50V
2836	4822 124 80791	470µF 20% 16V
2837	4822 126 11585	22nF +80-20% 25V
2838	4822 126 12882	100nF +80-20% 50V
2839	4822 126 12882	100nF +80-20% 50V
2841	4822 122 33195	100pF 10% 50V
2842	4822 124 40433	47µF 20% 25V

2843	4822 126 13098	5,6nF 20% 16V
2844	4822 122 10466	220pF 10% 50V
2846	4822 122 33519	470pF 10% 50V
2848	4822 122 33519	470pF 10% 50V
2849	4822 122 10466	220pF 10% 50V
2860	4822 124 40433	47µF 20% 25V

3801	4822 052 10478	4R7 5% 0,33W
3802	4822 116 52252	180K 5% 0,16W
3803	4822 111 50499	3M3 5%
3805	4822 116 83884	47K 5% 0,16W
3806	4822 116 52256	2K2 5% 0,16W
3807	4822 116 52271	33K 5% 0,16W
3808	4822 116 52263	2K7 5% 0,16W
3809	4822 116 83884	47K 5% 0,16W
3810	4822 116 52257	22K 5% 0,16W
3811	4822 116 52257	22K 5% 0,16W
3812	4822 116 52257	22K 5% 0,16W
3815	4822 050 11002	1K 5% 0,16W
3816	4822 050 11002	1K 5% 0,16W
3817	4822 116 83883	470R 5% 0,16W
3818	4822 116 83883	470R 5% 0,16W
3819	4822 117 11825	1M5 5%
3820	4822 116 52252	180K 5% 0,16W
3821	4822 116 52243	1K5 5% 0,16W
3822	4822 116 52264	27K 5% 0,16W
3823	4822 116 52234	100K 5% 0,16W
3824	4822 116 83868	150R 5% 0,16W
3826	4822 116 83961	6K8 5% 0,16W
3827	4822 116 52243	1K5 5% 0,16W
3828	4822 116 83864	10K 5% 0,16W
3829	4822 116 52271	33K 5% 0,16W
3830	4822 116 52244	15K 5% 0,16W
3831	4822 116 52251	18K 5% 0,16W
3832	4822 116 52222	390R 5% 0,16W
3833	4822 116 52264	27K 5% 0,16W
3835	4822 116 52184	18R 5% 0,16W

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CD97 (MK I)

3836	4822 050 11002	1K 5% 0,16W
3837	4822 111 30893	4M7 5%
3838	4822 116 52234	100K 5% 0,16W
3839	4822 116 52235	1M 5% 0,16W
3840	4822 050 11002	1K 5% 0,16W
3841	4822 116 52298	680K 5% 0,16W
3842	4822 116 52297	68K 5% 0,16W
3844	4822 116 52291	56K 5% 0,16W
3845	4822 116 52298	680K 5% 0,16W
3846	4822 050 11002	1K 5% 0,16W
3847	4822 116 52298	680K 5% 0,16W
3848	4822 116 52251	18K 5% 0,16W
3849	4822 052 10478	4R7 5%
3850	4822 116 52251	18K 5% 0,16W
3851	4822 116 52244	15K 5% 0,16W
3852	4822 116 83883	470R 5% 0,16W
3853	4822 116 52251	18K 5% 0,16W
3854	4822 116 52243	1K5 5% 0,16W
3855	4822 116 83882	29K 5% 0,16W
3856	4822 116 52303	8K2 5% 0,16W
3857	4822 116 52269	3K3 5% 0,16W
3858	4822 116 80176	1R 5% 0,16W
3859	4822 116 83864	10K 5% 0,16W
3860	4822 116 52207	1K2 5% 0,16W
3870	4822 052 10478	4R7 5%
3871	4822 116 52283	4K7 5% 0,5W
3880	4822 050 11002	1K 5% 0,16W
3881	4822 050 11002	1K 5% 0,16W
3882	4822 050 11002	1K 5% 0,16W
3883	4822 050 11002	1K 5% 0,16W
3884	4822 116 83882	39K 5% 0,16W
3886	4822 116 52235	1M 5% 0,16W
3890	4822 050 11002	1K 5% 0,16W
3891	4822 050 11002	1K 5% 0,16W
3892	4822 050 11002	1K 5% 0,16W
3893	4822 050 11002	1K 5% 0,16W
3894	4822 050 11002	1K 5% 0,16W
3895	4822 050 11002	1K 5% 0,16W
3896	4822 116 52256	2K2 5% 0,16W
3897	4822 116 52256	2K2 5% 0,16W

3898	4822 116 52256	2K2 5% 0,16W
3899	4822 050 11002	1K 5% 0,16W

5000	4822 526 10494	Ind Fxd 100MHz
5010	4822 526 10494	Ind Fxd 100MHz
5020	4822 526 10494	Ind Fxd 100MHz
5030	4822 526 10494	Ind Fxd 100MHz
5040	4822 526 10494	Ind Fxd 100MHz
5050	4822 526 10494	Ind Fxd 100MHz
5060	4822 157 50964	Coil 100µH 15%
5803	4822 242 73557	Filter 8MHz467

6001	4822 130 30624	Diode 1N4148

7801	4822 209 13703	IC M65821FP
7802	4822 209 32421	IC TDA1311A
7803	4822 209 90496	IC M62475FP
7804	5322 130 60068	Trans BC558C
7805	4822 209 32852	IC TDA7073A
7806	4822 209 32852	IC TDA7073A

- MISCELLANEOUS -

1802	4822 265 10925	Connector
8000	4822 265 10925	Connector

Note : Only those parts mentioned in the list are normal service parts.